PRICE TWO SHILLINGS AND SIXPENCE.

A

CHECK-LIST OF THE SLUGS.

BY

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Division of Mollusks
Sectional Library

WITH

APPENDIX AND NOTES

BY

WALTER E. COLLINGE,

DEMONSTRATOR OF BIOLOGY, MASON COLLEGE, BIRMINGHAM, ENGLAND.
EDITOR OF "THE JOURNAL OF MALACOLOGY."

(Reprinted from "The Conchologist," 1893, vol. ii., pts. 7-8, pp. 168-176, and 185-232.)

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A CHECK-LIST OF THE SLUGS.

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WITH APPENDIX AND NOTES

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Demonstrator of Biology, Mason College, Birmingham.

The present list is intended to include all the names, generic, specific, or varietal, which have been proposed for slugs. The writer is responsible for the arrangement, which is in accordance with his present views, but it is not supposed for a moment that it is in any degree final, and there can be no doubt that the labour of students in the near future will show many changes to be necessary. In many instances it is impossible to make sure of the correct location of a slug without such study of specimens and bibliographical research as are quite beyond the power of the compiler, situated as he is away from museums and malacological libraries. Those who have the opportunity may do good service by critically examining the doubtful names in this list, and determining their true value.

When the validity of a species or variety is doubtful, it is best in a check-list to give it the benefit of the doubt. Too great readiness to reduce names to synonymy may lead to blunders which are afterwards the source of much misunderstanding. For example, on reading Mabille's numerous descriptions, one is impressed by the fact that the author did not distinguish between specific and varietal characters, and the natural tendency is to assume that none of the so-called species are valid. Yet subsequent research has shown that some of them are perfectly distinct. Again, when false synonymy has been proposed, it is often followed by author after author, when a glance at the original description by any competent

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person would set matters right. In this way *Limax flavus*, Hoy, *L. squammatinus*, Morelet, &c., have for years been completely misunderstood. Another difficulty relates to the limit of species. In England we find comparatively few species, and these for the most part very distinct from one another, so that we are hardly prepared for the numerous closely allied forms of Southern Europe and elsewhere. *Limax maximus* and *L. flavus*, for instance, are subgenerically distinct; and English authors having in mind such distinctions as they present, have at various times refused to recognise species or subspecies differing in less degree. Thus *Arion hortensis* and *A. fasciatus*, *Testacella haliotidea* and *T. scutulum*,[1] and other valid species, have been long confounded. When we examine the *maximus* group of *Limax*, the *gagates* group of *Amalia*, the *lævis* group of *Agriolimax*, &c., the sharp distinctions between species seem to be altogether lost. In Central Europe the subspecies or species allied to *Limax maximus* are numerous and polymorphic, so that, despairing of finding good lines of separation, authors have sometimes proposed to unite them under a single name. Yet to thus confound *maximus*, *cinereo-niger*, and *geographicus*, &c., tends rather to obscure facts of great interest, and in the present list all such forms are given the rank of subspecies, which seems best to express their true standing. This gradation of forms, though so annoying to the pure systematist, is to the evolutionist full of interest, and the more carefully the units (whether species, subspecies, or varieties) are studied, the greater is the light thrown on the making of species. The slugs are by no means exceptional in furnishing such evidence of evolution, and it is very instructive to notice the way in which the difficulties of classification have been met in different groups of organisms. The student may be referred to the writings of Allen and Merriam on North American Rodents, of W. H. Edwards on *Argynnis*, of C. B. Adams on Jamaican Land Shells, of Bebb and Buchanan White on willows, of Baker on roses, &c., for similar instances.

Whereas formerly slugs were described only from external characters, the tendency now is to have little regard for any but anatomical. Here there is undoubtedly danger of error, since it is difficult to find out in many cases what is the stability of the apparent anatomical distinctions. There are plenty of "anatomical species" now on the lists which may hereafter be abolished[2]; and

[1] The difference between these slugs is constant and well marked, and they were only confounded so long as their structure was unknown.—W. E. C.

[2] For every so-called "anatomical species" which *may* hereafter be abolished we may count a dozen of the other species which most certainly will have to be placed as synonymns.—W. E. C.

it requires some amount of faith to believe in the distinctness of slugs which outwardly seem exactly alike.[3] While the value of differences in the genitalia is undoubted, it does not seem proper to assume that two forms are identical because the genitalia will not serve to distinguish them. Among moths, it is known that in some genera the species are easily separated by genitalia alone, while in others undoubtedly distinct species have similar genital organs. Nothing should be more strongly insisted upon than the impossibility of applying the same tests of specific validity throughout series of genera; for characters that are generic in one place may not be specific in another.

All mutations are included, which will be contrary to the wish of some malacologists. The writer has so often expressed his views about varieties and mutations, that it would be superfluous to discuss the subject here; but it is represented that a check-list should above all things be complete, and that it is better to include everything than cripple the work by ignoring names at one's discretion—or indiscretion—as it may be. All species are numbered consecutively, and varieties and mutations are lettered. Synonyms are without numbers or letters. Synonyms and names representing probable synonyms are in old style antique. Thus *Limax santorinus* is given a number because it cannot be definitely referred as a synonym, but it is printed in italics because it is probably not a valid species. A query (?) before a species or variety does not signify that it is doubtful, but that its place in the classification is doubtful. Fossil species are enclosed within square brackets [ ].

LIMACIDÆ, Leach, 1820; Turt. 1831.

LIMACINÆ, W. G. Binn., 1864.

LIMAX, L., 1758.
- **Limacias**, Raf., 1815.
- **Eulimax**, Moq.
- **Stabilia**, Pini.
- **Limacella**, Brard.
- **Limacellus**, Brard, em Turt.
- **Plecticolimax** (err. ?).
- **Gestroa.**
- **Chromolimax.**
- **Opilolimax.**
- **Cryptopelta** (err. ?).

Subg. **HEYNEMANNIA**, Malm.
- **Macroheynemannia**, Simr., 1891.

1. **L. maximus**, L.
   - **parma**, Brard, 1815.
   - **antiquorum** (pars), Fér.
   - **cinereus** (pars), Müll.
   - **cyreneus**, Comp., 1837 (err.?).

   a. **czernævii**, Kal.
   - **vulgaris**, Moq.
   - **fasciatus**, Pic., 1840 (nec Raz.).
     - i. **bifasciatus**, D. & M.
     - ii. **quadrifasciatus**, D. & M.
     - iii. **continuatus**, D. & M.

   b. **fasciatus**, Raz., 1789.

   c. **maculatus**, Leach, 1820, ed. Gray, 1852.
   - **krynickii**, Kal., 1851.
   - **johnstoni**, Moq., 1855.
     - i. **lilacinus**, Roeb., 1884.

[3] It requires still more faith to believe in the distinctness of two slugs which anatomically are identical, because the one is a different colour than the other —W. E. C.

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d. **marmoratus**, Ckll., 1885.
e. **punctatus**, Esmark, 1886.
i. **maculatus**, Picard (nec Leach).
f. **cellarius**, D'Arg., Moq.
g. **ferussaci**, Moq., 1855.
h. **mulleri**, Moq., 1855.
i. **serpentinus**, Moq., 1855.
j. **aldrovandi**, Moq., 1855.
k. **limbatus**, Moq., 1855.
l. **pallido-dorsalis**, Roeb. MS., Huds.
m. **obscurus**, Moq., 1855.
subunicolor, Roeb., sine descr.
i. **nebulosus**, D. & M.
n. **rufescens**, Moq., 1855.
o. **vinosus**, Baud.
p. *cinereus*, Roeb., ex err.
q. **megaspidus**, Blainv., 1817.
candidus, L. & P.
r. **strobeli**, Pini.
s. **gestroa**, Pini.
i. **cornaliæ**, Pini.
t. **concolor**, Pini.
u. **sordidus**, L. & P.
v. **bivonæ**, L. & P.
w. *fuscatus*, Raz. (err. ?).
x. **albus**, Am Stein, 1890.
y. **calosoma**, Eis. & Stuxb.
z. **giganteus**, Baud.
a'. **unicolor**, Heyn.
b'. **hareri**, Heyn.
c'. **tschapecki**, Simr., 1886.
d'. **pardalis**, Simr.
e'. **bocagei**, Da Silva, 1875.
f'. **bielzi**, Simr.
g'. *subunicolor*, Simr.
h'. **nubigenus**, Bgt., 1863.
i'. *abrostolus*, Bgt., 1863.

2 **L. m. punctulatus**, Sordelli.
a. **typus**, L. & P.
b. **parumpunctatus**, Pini.
c. **pradæ**, Pini.
d. **pinianus**, Less.

3. **L. m. psarus**, Bgt.
b. **subzonatus**, Poll., 1886.

4. **L. m. genei**, L. & P.

5. **L. m. ater**, Raz.
albipes, Stab., 1864.
engadinensis, Heyn.
b. **montanus**, Leyd.
c. **dubius**, L. & P.
d. **fasciatus**, Raz.
e. **pironæ**, Pini.

6. **L. m. polipunctatus**, Poll., 1888.
b. **raripunctatus**, Poll.

7. **L. m. millipunctatus**, Poll., 1884.

8. **L. m. canapicianus**, Poll., 1885.
b. **ocellatus**, Poll.

9. **L. m. cinereoniger**, Wolf in Sturm, 1805.
bilobatus, J. Ray, 1851.
cinereus, (pars.) Müll., 1776.
claravallensis, Drouet in Moq., 1855.
pyrenœus, Comp.
razoumouskii, Kal.
antiquorum (pars.), Fér.
maximus, Esmark. ex err., 1886.
a. **luctuosus**, Moq.
atratus, Pini.
b. **typus**, L. & P.
c. **maurus**, Held.
niger, Moq.
d. **ferussackii**, (sic) Kal.
cinereus, Moq.
e. **renardii**, Kal.
f. **transsylvanicus**, Heyn.
g. **ornatus**, Less.
h. **isseli**, Pini.
i. **strobeli** (Pini ?), Less.
j. **pavesi**, Pini.
k. **camerani**, L. & P.
l. **stabilei**, Less.
m. **leucogaster**, Mörch.
n. **albipes**, D. & M.
o. **lineatus**, Dum., 1849.
nigripes, Stab., 1864.
p. **malacologorum**, Colb.
q. **flavescens**, Wst.
r. **fasciatus**, Wst.
s. **cinereonebulosus**, Malm.
t. **albus**, Paasch.

10. **L. m. geographicus**, Ren.
dacampi, Meneg., 1854.
(i.) *a.* **menegazzii**, L. & P.
b. **amaliæ**, Bett.
c. **punctatus**, Less.

(ii.) *d.* renieri, L. & P.
e. atratus, Bett.
f. elegans, Bett.
g. sordellii, Bett.
h. nigricans, Less.
i. sulphureus, Less.
j. calderinii, Less.
(iii.) *k.* typus, Bett.
l. trilineolatus, Bett.
m. monolineolatus, Bett.
n. pinii, L. & P.
doriæ, Pini (nec Bgt.).
o. fuscus, Bett.
p. taccanii, Pini.
q. gualterii, Pini.
r. maculatus, Less.
s. pallescens, Less.
t. rufescens, Less.
u. monocromus, L. & P.
erytus, Pini.
v. villæ, Pini.
w. turatii, Pini.
x. lineatus, Strob.
11. L. m. erythrus, Bgt., 1864.
12. L. m. subalpinus, Less.
a. typus, L. & P.
b. garocelus, L. & P.
c. simplex, Less.
d. veronensis, L. & P.
e. eporediensis, Less.
13. *L. m. fungivorus*, Poll.
14. *L. m. alpinus*, Fér., 1822.
15. L. m. monticola, Bttg.
16. *L. modestus*, Flor., 1889 (? 1890).
17. *L. martinianus*, Bgt., 1869.
18. *L. maurelianus*, Bgt.
19. L. corsicus, Moq.
(i.) *a.* typus, Moq.
b. fabrei, Moq.
c. sienensis, L. & P.
(ii.) *d.* doriæ, Bgt., 1861.
e. simplex, L. & P.
f. lineatus, L. & P.
g. rubrolineatus, L. & P.
h. fuscus, L. & P.
i. brunneus, L. & P.
j. pallescens, L. & P.
k. sanguineus, L. & P.
(iii.) *l.* isselii, Less.
m. seriatus, L. & P.
n. arthuri, L. & P.
o. zonatus, L. & P.
(iv.) *p.* callichrous, Bgt., 1861.
q. versicolor, L. & P.
r. hybridus, L. & P.
(v.) *s.* gestri, Less.
t. nigrozonatus, L. & P.
u. pulcher, L. & P.
(vi.) *v.* bonellii, Less.
w. aterrimus, L. & P.
x. flavoniger, L. & P.
y. citrinus, L. & P.
z. olivaceus, L. & P.
(vii.) *a'.* ciminensis, Poll., 1890.
20. L. perosinii, L. & P.
callichrous, Less., 1880 (nec Bgt.)
a. typus, L. & P.
b. cruentus, Less.
c. formosissimus, L. & P.
d. monregalensis, L. & P.
e. venustissimus, L. & P.
21. L. carbonarius, Bttg., 1885.
græcus, Simr.
22. L. talyschanus, Bttg.
b. tigris, Bttg.
23. L. conemenosi, Bttg.
b. multipunctatus, Bttg.
24. *L. moravicus*, Ehrenb.
25. *L. santorinus*, Letourn., 1884.
26. *L. eustrictus*, Bgt.
[27. L. polloneræ, Sacc.
b. saxiformis, Sacc.]
[28. L. albucianensis, Sacc.]
[29. L. plioligusticus, Sacc.]
[30. L. fossilis, Sacc., 1885.]

Subg. MALACOLIMAX, Malm, 1868.
Malinastrum, Bgt.
Mikroheynemannia, Simr., 1891.
Ambigolimax, Poll., 1887.

31. L. tenellus, Nilss.
cereus, Held.
sylvaticus, D. & M.
cinctus, Heyn., 1861 (nec Müll.)
serotinus, Sch., 1848.
b. griseus.
c. xanthius, Bgt.
d. clypeofasciatus, D. & M.
e. clypeoconcolor, D. & M.
f. immaculatus, D. & M.

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32. **L. subsaxanus**, Bgt.
33. **L. cephalonicus**, Simr.
34. **L. raymondianus**, Bgt.
35. **L. brondelianus**, Bgt.
36. **L. nyctelius**, Bgt.
37. **L. valentianus**, Fér.
38. **L. fulvus**, Norm., 1852.

Sect. **MELITOLIMAX**, Poll.

39. **L. melitensis**, L. & P.

Subg. **VITRINOIDES**, Simr., 1891.

40. **L. armeniacus**, Simr.

Subg. **LEHMANNIA**, Heyn., 1863.

41. **L. marginatus**, Müll., 1774.
    ? **sylvestris**, Scop., 1772.
    filans, Hoy, 1789.
    arboreus, F. & H., ex err.
    sylvaticus, Goldf., 1856.
    scandens, Norm., 1852.
    scopulorum, Fb., 1779.
    glaucus, Clk., 1853.
    ? **salicium**, Bouill., 1836, sine descr.
    limbatus, Held., 1837.
    arborum, Bouch., 1838.
    livonicus, Schr., 1848.
    a. **typus**, L. & P.
    b. **nemorosus**, Baud.
    altilis, Fisch.
    c. **roseus**, Brœck., 1870.
    d. **coloratus**, Brœck, 1870.
    e. **helveticus**, Bgt., 1862.
    reticulatus, D. & M., 1852.
    f. **dianæ**, Kim.
    g. **heynemanni**, Bielz.
    h. **bettonii**, Sord.
    i. **alpestris**, L. & P., 1882.
    j. **pallens**, L. & P., 1882.
    k. **rupicola**, L. & P., 1882.
    l. **maculatus**, Roeb.
    m. **decipiens**, Ckll., 1886.
    n. **albomaculatus**, Kregl., sine descr.
    o. **submaculatus**, Ckll., 1890.
    p. **carpaticus**, Haz., 1885.
    q. **tigrinus**, Weinl.
    r. **flavus**, Weinl., 1876.
    s. **obscurus**, Esmark., 1886.
42. **L. m. mongianensis**, Paul.
43. *L. eubalius*, Bgt., 1864.

Sect. **LIMACUS**, Lehm., 1864.

Plepticolimax, Malm., 1868.
Simrothia.

44. **L. flavus**, L.
    variegatus, Drp., 1801.
    ehrenbergi, Bgt.
    ? **unguiculus**, Brard, 1815.
    bicolor, Selenka.
    chilensis, Gay, 1854.
    megalodontes, Q. & G., 1824.
    concavus, Turt., ex err.
    b. **umbrosus**, Phil., 1844.
    c. **breckworthianus**, Lehm.
    d. **antiquorum**, Sby.
    e. **maculatus**, Kal., 1839.
    f. **campanyoni**, Bgt., 1863.
    companoyi (Bgt.), Loc.
    g. **bœticus**, Mab.
    h. **deshayesi**, Bgt.
    i. **flavescens**, Fér., Moq.
    j. **rufescens**, Moq.
    k. **nigromaculatus**, Ckll., 1893.
    maculatus, Moq., 1856. (nec Kal.).
    l. **tigrinus**, Pini.
    m. **colubrinus**, Pini.
    n. **virescens**, Moq.
    o. **suffusus**, Roeb.
    p. **griseus**, Roeb.
    ? *q.* *lineolatus*, Cllge.
    r. *canariensis*, D'Orb.
    antiquorum, Ledm., 1819.
    s. *calendymus*, Bgt.
45. **L. f. ecarinatus**, Bttg., 1881.

Subg. **LIMACOPSIS**, Simr., 1889.

Frauenfeldia, Hazay (nec. Egg.)

46. **L. cœrulans**, Bielz.
    b. **incomptus**, Kim.
    c. **interruptus**, Kim., 1884.
47. **L. c. schwabi**, Frauenf.
48. **L. montenegrinus**, Bttg.
49. **L. creticus**, Simr.

LIMAX, Subg. incert.

50. *L. versicolor*, Haz., 1885.
51. *L. crispatus*, Baud., 1871.
52. *L. bielzii*, Seib., 1873.
53. *L. cinereo-immaculatus*, Olafs.
54. *L. gyratus*, Wst.
    b. bergensis, Wst.
55. *L. niger*, Malz.
56. *L. taygetes*, Desh.
57. *L. phœniciacus*, Bgt.
58. *L. keyserlingi*, Mts.

59. *L. lineolatus*, Risso.
60. *L. collinus*, Norm., 1852.
?61. *L. memnon*, Theob., sine descr., 1864.
?62. *L. bengalensis*, Theob., sine descr.
63. *L. æquinoctialis*, D'Orb.
64. *L. valdivianus*, Phil.
?65. *L. cobanensis*, Cr. & F., 1872.
[66. L. lingulatus, Sandb.]
[67. L. modioliformis, Sandb.]
[68. L. latus, Edw.]

LYTOPELTE, Bttg., 1886.
Platytoxon, Simr., 1886.

69. L. maculatus, Koch & Heyn., 1874.
70. L. longicollis, Bttg.

EUMILAX, Bttg., 1881.

71. E. brandti, Mts., 1880.
b. subunicolor, Ckll., 1893.

Sect. GIGANTOMILAX, Bttg., 1883.

72. E. lederi, Bttg., 1883.

Sect. PARALIMAX, Bttg., 1883.

73. E. varius, Bttg., 1884.
74. E. multirugatus, Bttg., 1888.
75. E. intermittens, Bttg.
76. E. reibischi, Simr., 1891.
?77. E. armeniacus, Simr., 1886.

AMALIA, Moq., 1855.
?Aspidoporus, Fitz., 1833.
Milax, Gray, 1855.

Sect. LALLEMANTIA, Mab., 1868.
Clytropelta, Heyn., 1867.
Palizzolia, Bgt., 1876.
Pirainea, L. & P.

78. A. gagates, Drap., 1801.
carinata, D'Orb.
polyptyela, Bgt.
drymonius, Bgt.
carinata, Gray, 1855, ex err.
cinerea, Ledm.
atrata, Mab., 1868.
a. typus, L. & P.
b. typica, Poll., 1891.
c. olivacea, Moq.
d. bedriagæ, L. & P.
e. benoiti, L. & P.
f. atlantica, Ckll., 1891.
g. maderensis, Ckll.
raymondiana, Simr., ex err., 1891.
h. ascensionis, Less.
i. helenæ, Ckll.
ii. tristensis, Ckll.
i. pallidissima, Poll., 1891.
j. hewstoni, Cooper.
i. plumbea, Ckll.
79. A. g. plumbea, Moq.
b. rava, Wllms.
80. A. g. ichnusæ, L. & P., 1882.
81. A. g. mediterranea, Ckll.
b. similis, Ckll.
82. A. g. insularis, L. & P., 1882.
? scaptobia, Bgt., 1861.
a. typica, Poll., 1891.
b. algerica, Poll., 1891.
83. A. g. doderleini, L. & P., 1882.
84. A. g. sicula, L. & P., 1882.
? monterosati, Bgt.
85. A. g. cabiliana, Poll., 1891.
86. A. g. eremiophila, Bgt., 1861.
87. *A. g. nigricans*, Schultz in Phil.
88. A. g. maura, Q. & G.
pectinata, Selenka, 1865.
olivacea, Gld.
89. A. g. nigricolus, Tate, 1881.
nigricollus, Tate em Tryon
90. A. g. tasmanica, Tate, 1881.
91. A. g. antipodarum. Gray.
b. pallida, Ckll., 1891.
c. emarginata, Hutt.
92. A. g. fuliginosa, Gld.
93. *A. g. sandwichiensis*, Eyd.
?94. *A. capensis*, Krauss, 1848.
kraussii, Ads.
?95. *A. mouensis*, Gass.

Sect. TANDONIA, L. & P.

96. A. marginata, Drap.
marginalis, Schnur.
? cristata, Leibl., 1829, sine descr.
a. typus, L. & P.
b. rustica, Mill.
affinis, Mill.
c. pyrrichus, Mab., 1870.
d. rufula, Moq.
97. A. sowerbii, Fér., 1823.
carinata, Leach, 1820, ed. Gray, 1852.
argillacea, Gass., 1856.
unguicula, Turt., ex err.
b. rustica, Roeb., ex err.
c. nigrescens, Roeb. MS., Ckll., 1886.
d. fuscocarinata, Ckll., 1886.

e. **bicolor**, Ckll.
f. *pallida*, B. Mus. MS., Ckll. (sine descr.)
98. **A. s. carinata**, Risso, 1826.
fulva, Paul.
a. **typus**, L. & P.
b. **pallidissima**, L. & P.
c. **insolita**, L. & P.
d. **oretea**, L. & P.
e. **casertana**, L. & P.
99. *A. s. eichwaldi*, Kal.
100. *A. s. pacomei*, Flor., 1889 (?1890).
101. **A. s. tyrrena**, L. & P., 1882.
102. **A. s. etrusca**, Issel., 1868.
103. **A. s. hessei**, Bttg.
104. **A. s. kobelti**, Hesse, 1882.
105. **A. gracilis**, Leyd., 1876.
marginata, Kim.
gagates, Meneg.
cibienensis, Kim.
b. **budapestensis**, Haz., 1881.
106. **A. cristata**, Kal., 1851.
?**pallidula**, Ckll.
107. **A. reuleauxi**, Cless., 1887.
b. **punctata**, Cless., 1887.
108. **A. barypus**, Bgt.
Sect. **SUBAMALIA**, Poll.
Malinastrum, Simr., ex err.
109. **A. hellenica**, Simr., 1886.
110. **A. cretica**, Simr., 1884.
111. **A. kaleniczenkoi**, Cless.
112. **A. robici**, Simr., 1884.
Amalia, sect. incert.
?113. *A. limax*, Fitz., 1833.
[114. **A. eocenica**, Sacc.]
[115. **A. gracilior**, Sandb.]
[**SANSANIA**, Bgt.]
[116. **S. larteti**, Dupuy, 1850.]
[117. **S. crassitesta**, Reuss.]
MESOLIMAX, Poll., 1888.
118. **M. brauni**, Poll., 1888.
119. **M. reibischi**, Simr., 1891.
AGRIOLIMAX, Mörch in Malm., 1868.
Limacellus, "Fér., 1821," Kregl.
Krynickia, (pars) Kal., 1839.
Krynickillus, (pars) Kal., 1851.
Megapelta, Mörch, 1857.
Megaspis, Kryn. MS., Gray.
Malino, Gray, 1855.
?**Deroceras**, Raf., 1820.
Hydrolimax, Malm., 1868.
120. **A. agrestis**, L.
hyalinus, L.
obliquus, Brard, 1815.
tunicatus, Gould, 1841.
niciensis, Bgt. MS., Nev., 1880.
canariensis, E. A. Sm., ex err.
a. **typus**, L. & P.
albidus, Pini.
b. **flaviclypeus**, D. & M., 1857.
filans, Gray ex Leach err.
?*c.* **auratus**, Less.
d. **tristis**, Moq.
e. **lilacinus**, Moq.
f. **succineus**, "Müll.," Wst.
g. *typicus*, Ckll. ex Roeb. err.
h. **niger**, Morel.
i. **albidus**, Pic.
j. **albus**, Ckll.
albidus, Roeb., ex err.
k. **rufescens**, L. & P.
l. *rufescens*, D. & M.
m. **griseus**, Ckll., 1889.
n. **cineraceus**, Moq.
o. **melanocephalus**, Moq.
p. **xanthosoma**, Fisch.
q. **ornatus**, Paul (nec Moq.)
rufescens, Pini.
r. **bilobatus**, Fér.
s. **reticulatus**, Müll.
legrandi, Tate, 1881.
t. **veranyanus**, Bgt., 1861.
u. **florentinus**, L. & P.
v. **submaculatus**, Wllms.
w. **obscurus**, Moq.
x. **punctatus**, Picard.
y. **nigricans**, Wst.
z. **nigrescens**, J. Colb.
a'. **varians**, Wst.
b'. **sylvaticus**, Moq. (nec Drap.)
c'. **etruscus**, Issel.
d'. *weinlandi*, Heyn.
e'. *molestus*, Hutton.
f'. **albitentaculatus**, D. & M.
g'. **atritentaculatus**, D. & M.
?*h'.* **fasciatus**, D. & M.
i'. **nemorosus**, Mab., 1870.

j'. **saxorum**, Baud., 1862.

121. **A. a. panormitanus**, L. & P., 1882.
? **virescens**, Schultz in Phil.

122. *A. varians*, A. Ad.

123. *A. setchuanensis*, Heude, 1885.

124. *A. minutus*, Kryn. MS., Kal., 1851.

125. **A. pallidus**, Schr.
norvegicus, Wst.
agrestis, Lindstr., ex err.
filans, Sord., ex err.
b. **immaculatus**, L. & P.
c. **fusconotatus**, L. & P.

126. **A. melanocephalus**, Kal., 1839.

127. **A. dymezeviczii**, Kal., 1839.

128. **A. immaculatus**, Simr., 1891.

129. **A. sardus**, Simr., 1886.

130. **A. lombricoides**, Morel.

131. **A. simrothi**, Ckll.
drymonius, Simr., ex. err.

132. **A. subagrestis**, Simr., 1891.

133. **A. agresticulus**, Simr., 1891.

134. **A. maltzani**, Simr., 1884.
ponsonbyi, Hesse, 1885.

135. **A. phœniciacus**, Bgt., 1853.

136. **A. berytensis**, Bgt., 1853.

137. **A. fedtschenkoni**, Koch & Heyn., 1874.

138. **A. thersites**, Heyn. & Koch, 1886.

139. **A. bottgeri**, Simr.

140. **A. oertzeni**, Simr.

141. **A. carranæ**, Poll., 1891.

142. **A. polloneræ**, Simr., 1889.

143. *A. majoricensis*, Heyn.

144. **A. pycnoblennius**, Bgt., 1861.

145. *A. iberus*, Eichw.

146. **A. altaicus**, Simr., 1886.

147. *A. andrios*, Simr. (sine descr.).

148. *A. hanryanus*, Flor., 1889 (? 1890).

149. *A. cyrniacus*, Mab.

150. *A. pallens*, Simr. (sine descr.).

151. *A. jickelii*, Heyn.

152. **A. nitidus**, Simr.

153. **A. lævis**, Müll., 1774.
brunneus, Drp., 1801.
arenarius, Gass., 1867.
parvulus, Norm., 1852.
b. **mucronatus**, Wst.
c. **maculatus**, Ckll.
d. **intentaculatus**, Baud.

154. *A. l. mentonicus*, Nev., 1880.

155. *A. l. lacustris*, Bonelli in L. & P., 1882.

156. *A. l. heydeni*, Heyn., 1863.

157. *A. l. bourguignati*, Mab., 1870.

158. **A. l. rarotonganus**, Heyn.

159. **A. l. braziliensis**, Semper.

160. **A. l. andecolus**, D'Orb.

161. **A. l. berendti**, S. & Pf.
b. **hemphilli**, W. G. Binn.
c. **pictus**, Ckll. in W. G. Binn.

162. *A. l. semitectus*, Mörch, 1857.

163. *A. l. guatemalensis*, Cr. & Fisch., 1870.

164. *A. l. americanus*, Tate, 1869.

165. **A. l. stenurus**, Streb., 1880.

166. **A. l. campestris**, Binn., 1841.
tunicatus, Gray ex err., 1855.
? **gracilis**, Raf.
b. **occidentalis**, Cooper.
c. **hyperboreus**, Wst.
d. **montanus**, Ing.
castaneus, Ing.
ingersolli, W. G. Binn.
i. **typicus**, Ckll.
ii. **intermedius**, Ckll.
iii. **tristis**, Ckll.
e. **zonatipes**, Ckll.
f. **nigrescens**, Ckll.

167. *A. l. argentinus*, Strob.
meridionalis, Döring.

168. *A. l. sanwichiensis*, "Soul.," Semper.

169. **A. l. jalapensis**, Str. & Pfr.

170. *A. l. queenslandicus*, Hedley, 1888.

[**PACHYMILAX**, Bttg.].

[171. **P. sandbergeri**, Bttg., 1884.]

MABILLIA, Bgt., 1872.

MEGASPIS, Bgt. (nec. Gray).
(No species named).

DELEVIELEUSIA, Hag., 1885.
172. *D. bourguignati*, Hag., 1885.
173. *D. letourneuxi*, Hag., 1885.
174. *D. prisca*, Hag., 1885.
175. *D. eximia*, Hag., 1885.
176. *D. elongata*, Hag., 1885.
FAUDELIA, Hag., 1885.
177. *F. letourneuxi*, Hag., 1885.
CHANCELIA, Hag., 1885.
178. *C. letourneuxi*, Hag., 1885.

PARMACELLINÆ, Ckll., 1891.

PARMACELLA, Cuv., 1804.
Drusia, Gray, 1855.
Parmacellina, Sandb.
Cryptella, Webb & Berth, 1833.
Candaharia, G.-Aust.
179. **P. olivieri**, Cuv., 1805.
mesopotamiæ, Oken, 1816.
ambigua, Fér., 1820, teste Crosse.
b. **ibera**, Eichw., 1841.
180. *P. alexandrina*, Ehr., 1831.
181. **P. dorsalis**, Mouss., 1874.
182. **P. deshayesii**, Moq.
algerica, Desh.
b. **major**, Wst.
183. **P. valenciennii**, W. & Van B.
moquini, Bgt., 1859.
a. **typica**, Ckll., 1887.
b. **punctulata**, Ckll., 1887.
184. **P. v. maculata**, Ckll., 1887.
valenciennesi, Hesse, 1885.
b. **olivacea**, Ckll., 1887.
185. **P. gervaisi**, Moq., 1850.
186. **P. calyculata**, Sowb.
ambigua, d'Orb.
canariensis, W. & Berth.
b. **auriculata**, Mouss.
187. **P. callosa**, Mouss.
188. **P. rutellum**, Hutton, 1849.
[189. **P. sayni**, Font.]
[190. **P. unguiformis**, Gerv.]
[191. **P. vitrinæformis**, Sandb.]
[192. **P. succini**, Klebs.]
[193. **P. paladilhiana**, Pench.]

TRIGONOCHLAMINÆ, Ckll., 1891.

TRIGONOCHLAMYS, Bttg.
194. **T. imitatrix**, Bttg.
195. **T. retowski**, Bttg.
196. **T. semiplumbeus**, Bttg., 1886.

PSEUDOMILAX, Bttg.
197. **P. lederi**, Bttg.
198. **P. bicolor**, Bttg.
199. **P. velitaris**, V. Mts., 1880.

SELENOCHLAMYS, Bttg.
200. **S. pallida**, Bttg.

PLUTONIINÆ, Ckll.

PLUTONIA, Stab.
Viquesnelia, Morel. ex err.
201. **P. atlantica**, Morel. & Drouet.
b. **simrothi**, Ckll.

CYSTOPELTINÆ, Ckll., 1891.

CYSTOPELTA, Tate, 1881.
202. C. petterdi, Tate, 1881.

HELICARIONINÆ, G.-Aust.

VELIFERA, W. G. Binn.
203. **V. gabbi**, W. G. Binn.

ASPIDELUS, Morel., 1883.
204. **A. chaperi**, Morel., 1883.

ESTRIA, Poirier, 1887.
205. **E. allaudi**, Poirier, 1887.

DAMAYANTIA, Issel.
206. **D. dilecta**, Issel.

MARIAELLA, Gray.
Clypidiella, Val. MS., teste Gray.
Tennentia.
Dekhania, G.-A.
Vega, Wst.
207. **M. dussumieri**, Val. MS., Gray.
208. **M. d. thwaitesii**, Humb.
209. **M. d. beddomei**, G.-A.
b. **nigra**, G.-A.
c. **maculosa**, G.-A.
210. *M. infumata*, Fér.
211. *M. nordenskioldi*, Wst.
212. **M. philippinensis**, Semp.

IBYCUS, Heyn.
213. **I. gracilis**, Gray, 1855.
fissidens, Heyn.
sikkimensis, G.-A., 1888.
b. **mainwaringi**, Nev. MS., G.-A.
214. *I. problematicus*, Fér.
215. **I. cacharicus**, G.-A., 1888.
216. **I. pupillaris**, Humb.
punctatus, Hass.
b. **punctata**, V. Mts.
c. **marmorata**, V. Mts.

d. vittata, V. Mts.
217. I. siamensis, Ckll.
218. I. beccaria, Issel, 1874.
b. doriæ, Issel, 1874.
Sect. CRYPTIBYEI, Ckll., 1891.
219. I. magnificus, Nev. & G.-A.
Subg. PSEUDAUSTENIA, Ckll., 1891.
220. I. ater, G.-A.
b. aterrimus, G.-A.
c. cinerus, G.-A.
d. castaneus, G.-A.
?221. I. auriformis, Blf., 1866.
PARMACOCHLEA, E. A. Sm.
222. P. fischeri, E. A. Sm.
AFRICARION, G.-A.
223. A. palleus, "Morel.," G.-A.
224. A. lymphaseus, Morel.
AUSTENIA, Nev., 1878, sine descr., G.-A., 1883, descr.
? Laconia, Gray.
225. A. gigas, Bs.
226. A. hyalea, Bock.
227. A. peguensis, Theob.
228. A. unguicula, Morel.
229. A. aperta, Beck. MS., Pfr., 1848.
230. A. verrucosa, G.-A.
231. A. erratica, G.-A., 1888.
232. A. khyoungensis, G.-A., 1888.
?233. *A. ferussaci*, Gray.
?234. A. venusta, Theob.
235. A. feæ, Canefri, 1890.
?236. A. salius, Bens.
b. ovata, G.-A.
237. A. papillaspira, G.-A.
?238. A. globosa, G.-A.
?239. A. panchetensis, G.-A.
?240. A. bensoni, Pfr.
b. sylhetensis, G.-A.
?241. A. monticola, Bens.
?242. A. stoliczkanus, Nev.
?243. A. serahanensis, G.-A.
?244. A. theobaldi, G.-A.
Sect. EUAUSTENIÆ, Ckll., 1891.
245. A. scutella, Bs.
Sect. CRYPTAUSTENIÆ, Ckll., 1891.
246. A. planospira, Bs., 1859.
succinea, Reeve.
GIRASIA, Gray, 1855.
Hoplites, Theob., sine descr. 1864.
Parmarion, Fischer, 1856.
Rigasia, Gray.
247. G. extranea, Fér.
theobaldi, G.-A.
a. hookeri, Gray.
b. brunnea, G.-A.
c. shillongensis, G.-A.
d. maculosa, G.-A.
248. G. crocea, G.-A., 1872.
b. depressa, Ckll., 1891.
249. G. burtii, G.-A.
? *b.* radha, G.-A.
250. G. nagaensis, G.-A.
251. G. cinerea, G.-A.
252. G. dalhousiæ, G.-A.
253. G. pankabariensis, G.-A., 1888.
254. G. serahanensis, G.-A., 1888.
255. G. butleri, G.-A.
minor, G.-A.
? resplendens, Nev.
?256. G. solida, G.-A.
257. G. affinis, Ckll., 1891.
258. G. setchuanensis, Heude, 1885.
259. G. kersteini, V. Mts.
260. G. tæniata, Hass.
261. *G. reticulata*, Hass.
262. *G. lutea*, Mouss. in V. Mts.
263. *G. plana*, Mouss. in V. Mts.
PARMELLA, H. Ad.
264. P. planata, H. Ad.
265. P. etheridgei, Brazier.
ELISOLIMAX, Ckll.
Elisa, Heyn., preocc.
266. E. longicauda, Fisch., 1882.
b. maculata, Fisch.
bella, Heyn, 1883.
c. permaculata, Ckll., 1891.
UROCYCLUS, Gray, 1864.
267. U. kirkii, Gray.
268. U. flavescens, Kef., 1866.
269. U. pallescens, Ckll., 1891.
270. U. comarensis, Fisch.
271. U. vittatus, Fisch.
272. U. buchholzi, V. Mts.
273. U. fasciatus, V. Mts., 1879.
flavescens, Gibbons ex err.
b. pallidus, Gibbons.
274. U. acuminatus, Poirier, 1887.
275. U. kraussianus, Heyn, 1862.
276. U. madagascariensis, Poirier, 1887.
DENDROLIMAX, Dohrn.
277. D. heynemanni, Dohrn

278. **D. graeffei**, Simr., 1890.

TRICHOTOXON, Simr., 1888.

279. **T. heynemanni**, Simr., 1890.
280. **T. martensi**, Heyn.

ATOXON, Simr., 1890.

281. **A. hildebranti**, Simr., 1890.
282. **A. schulzei**, Simr., 1890.

BUETTNERIA, Simr., 1890.

283. **B. leuckarti**, Simr., 1890.

PHANCROPORUS, Simr., 1888.

284. **P. reinhardti**, Simr., 1890.

Subf. **OTOCONCHINÆ**, Ckll.

OTOCONCHA, Hutton.

285. **O. dimidiata**, Pfr., 1851.
286. **O. zebra**, Leguill., 1842.

TESTACELLIDÆ, Gray, 1833.

TESTACELLA, Cuv., 1800.
Testacellus, F.-Big., 1802.
Helicolimax, Fér.

287. **T. maugei**, Fér., 1819.
haliotidea (pars), Lam., ex err., 1801.
burdigalensis, Gass. in Grat., 1855.
vagans, Hutton.
oceanica, Grat., 1855.
canariensis, Grat., 1855.
b. viridans, Morel.

[288. **T. m. deshayesi**, Mich., 1855.
altæ-ripoe, Grat.].

289. **T. catalonica**, Poll., 1888.
290. **T. scutulum**, Sby., 1823.
anglica, Grat.
scutata, Less., 1838.
a. typica, Ckll.
b. pallida, Ckll.
c. aurea, Ckll.
d. medii-templi, Tapping.
291. **T. s. pecchiolii**, Bgt.
292. **T. s. bisulcata**. Risso, 1826.
galloprovinciales, Grat., 1855.
b. major, Wst.
293. *T. albida*, Ckll., 1885.
294. **T. episcia**, Bgt., 1861.
bisultata (pars), Risso, 1826.
295. **T. campanyonii**, Dup., 1847.
campanyoi, Dup. em. P. Massot, 1870.
canigonensis, Grat., 1855.
296. **T. pascali**, Bgt., Massot, 1870.
297. **T. bourguignati**, Massot, 1870.
298. **T. brondeli**, Bgt.
299. **T. subtrigona**, Poll., 1888.
300. **T. haliotidea**, Drp., 1801.
europœa, Roissy in Buffon, 1805.
haliotides, Cantr., 1840.
galliœ, Oken, 1815.
subterranea, Laf., 1806.
b. major, Pfr.
c. albinos, Moq.
? albina, Pfr.
d. elongata, Pfr.
e. ovalis, Moq.
f. trigona, Gass. & Fisch.
g. flavescens, Moq.
h. dilatata, Poll., 1889.
301. **T. h. barcinonensis**, Poll., 1888.
302. **T. h. dubia**, Poll., 1888.
303. **T. fischeriana** Bgt.
major, Gass. & Fisch.
304. **T. gestroi**, Issl.
305. **T. williamsiana**, Nevill.
306. *T. servaini*, Massot, 1870.
307. *T. drymonia*, Bgt., 1861.
haliotidea, Costa ex err. 1840.
308. *T. beccarii*, Issel.
309. *T. stabilei*, Pini.
310. *T. peletti*, Massot., 1872.
[311. **T. asinina**, Serres.]
[312. **T. bruntoniana**, Serres.]
[313. **T. lartetii**, Dup., 1850.]
[314. **T. nouleti**, Bgt., 1881.]
[315. **T. pedemontana**, Sacco, 1885.]
[316. **T. zelli**, Klein.]
?317. *T. dikrangensis*, G.-A.
?318. *T. aurigaster*, Layard.

DAUDEBARDIA, Htm. in Sturm. 1821.
Helicolimax, Gray.

Subg. **LIBANIA**, Bgt., 1867.
Moussonia, Bgt., 1866 (nec. Semp., 1865).
Pseudolibania, Stef.
Sieversia, Rossm.
Rufina, Cless.
Eudaudebardia, Wst.

319. **D. rufa**, Drp., 1805.
b. cycladum, V. Mts., 1889.
c. viridis, Reul., 1889.

320. **D. r. heldii**, Cless., 1872.
nivalis, Cless. ex err.
321. **D. r. nivalis**, Benoit.
322. **D. r. monticola**, Benoit.
323. **D. hassiaca**, Cless., 1868.
324. **D. letourneuxi**, Bgt.
325. **D. nubigena**, Bgt.
326. **D. grandis**, Benout.
327. **D. haliciensis**, Wst., 1881.
328. **D. isseliana**, Nevill.
329. **D. brevipes**, Drp., 1805.
longipes, Zgl.
b. **maravignœ**, Pirajno, 1840.
330. **D. atlantica**, Bgt.
331. **D. platystoma**, Let., 1870.
332. **D. charopia**, Let., 1870.
333. *D. elata*, Mühlf., sine descr.
334. **D. lederi**, Bttg., 1881.
b. albinos, Wst. sine descr. 1886.
335. **D. sicula**, Bivona, 1839.
rufa, Benoit, ex err.
elongata, Calcara.
336. **D. heydeni**, Bttg., 1879.
pawlenkoi, Bttg., 1880.
337. **D. sieversi**, Bttg., 1880.
338. **D. fischeri**, Bgt., 1864.
sicula, Fisch., ex err. 1856.
339. **D. bœttgeri**, Cless.
340. **D. tarentina**, De Stef, 1879.
341. **D. calophana**, Wst., 1881.
342. **D. langi**, Pfr., 1846.
transsilvanica, Blz., 1859.
bielzi, Parr.
343. **D. saulcyi**, Bgt.
berytensis, Grat.
syriaca, Roth.
344. **D. s. gaillardoti**, Bgt.

Subg. **ISSELIA**, Bgt.

345. **D. sardoa**, Issel.

SCHIZOGLOSSA, Hedley, 1893.

346. **S. novoseelandica**, Pfr., 1862. (1861 ?)

CHLAMYDEPHORUS, W. G. Binn., 1879.
Apera, Heyn.

347. **C. gibbonsi**, W. G. Binn., 1879.
348. **C. burnupi**, E. A. Smith, 1892.

? *PHOSPHORAX*, Webb & Berth.

349. *P. noctilucus*, D'Orb., in Fér.

PLECTROPHORUS, Fér., 1819.

350. *P. orbignii*, Fér.
351. *P. costatus*, Bosc.
?352. *P. corninus*, Bosc.

ARIONIDÆ, Gray.

OOPELTINÆ, Ckll., 1891.

OOPELTA, Mörch in Heyn., 1867.

353. **O. nigropunctata**, Mörch in Heyn.
?354. **O. aterrimia**, Gray, 1855.

BINNEYINÆ, Ckll., 1891.

BINNEYA, J. G. Cooper, 1863.
Xanthonyx, Cr. & Fisch., 1867.

355. **B. notabilis**, J. G. Coop.
356. **B. sumichrasti**, Brot., 1867.
357. **B. salleana**, Pfr., 1856.
358. **B. cordovana**, Pfr., 1859.
359. **B. chiapensis**, Pfr.

HEMPHILLIA, Bld. & Binn., 1872.

360. **H. glandulosa**, Bld. & Binn.

CRYPTOSTRACON, W. G. Binn., 1879.

361. **C. gabbi**, W. G. Binn.

PELTELLA, Webb & Van. B.
Pectella, Gray.
Peltellina, Gray.

362. **P. palliolum**, Fér.
? **americana.**

Subg. **GŒOTIS**, Shutll.

363. **G. albopunctata**, Shutll.
364. **G. flavolineata**, Shutll.
365. **G. nigrolineata**, Shutll.

ARIONINÆ, W. G. Binn, 1864.

ARION, Fér., 1819 (1817 ?).
Baudonia, Mab.
Eugeomalacus, Mab., 1870.
Kobeltia, Seib.
Prolepis, Moq.
Lochea, Moq.
Carinella, Mab.

366. **A. ater**, L. 1758.
b. **albus**, L.
i. **simplex**, Moq.
ii. **marginatus**, Moq.
iii. **elegans**, Moq.
iv. **oculatus**, Moq.
c. **medius**, Jens.
d. cinereonebulosus, Jens.
e. cinereus, Wst.
f. marginatus (Moq. ?) Esm.
367. **A. a. rufus**, L. 1758.
melanocephalus, F.-Big.
subflavus, Johns.
empiricorum, Fér.

glaucus, Colb.
a. johnstonii, Kal.
vulgaris, Moq.
i. draparnaudii, Kal.
ii. brunneus, Roeb.
b. lamarckii, Kal.
ruber, Moq.
c. nigrescens, Raz.
razoumowskii, Kal.
? fuscatus, Fér.
i. seminiger, Ckll.
ii. cinerascens, Ckll.
cinereus, Roeb. (nec. Wst.)
iii. plumbeus, Roeb.
iv. aldrovandii, Kal.
ater, Moq.
niger, D. & M.
v. griseomarginatus, D. & M.
d. aterrimus, D. & M.
e. marginellus, Schr.
swammerdamii, Kal.
marginatus, Moq.
f. luteus, Raz. 1789.
succineus (pars), Müll.
flavescens, Fér.
schrankii, Kal., 1851.
i. lividus, Colb., 1866.
ii. *ferussackii*, Kal., 1851.
virescens, Mill., 1850(?1854).
subdeletus, Ckll., 1886.
g. pallescens, Moq.
i. luteopallescens, Roeb. MS., Ckll.
ii. brunneopallescens, Roeb.
iii. fuscolutescens, Ckll.
iv. *luteoalbescens*, L. E. Ad., sine descr.
h. albus, Fér.
albidus, Roeb.
i. reticulatus, Roeb.
j. bicolor, Moq.
k. scharffi, Ckll.
i. subreticulatus, Ckll., 1886.
ii. elineolatus, Ckll., 1886.
l. albolateralis, Roeb.
m. bocagei, Simr., sens. Cllge.
n. fasciatus, Ckll.
? *o.* *fasciatus*, Seib.
p. mulleri, Kal.
q. maculatus, D. & M.
r. violescens, Cllge.
s. *bicolor*, V. d. Brœck, 1870.
t. rupicola, Mab.
? *u.* olivaceus, Lehm, 1856.
? *v.* servainianus, Mab., 1870.

368. A. a. hibernus, Mab., 1868.
rufulus, Baudon, 1884.
369. A. a. brevierei, Poll., 1887.
b. niger, Brev. in Poll.
370. A. a. aggericola, Mab., 1870.
371. A. a. sulcatus, Morel, 1845.
b. bocagei, Simr., s. str.
pallescens, Lisb. Mus. MS., sine descr.
372. A. lusitanicus, Mab., 1868.
rufus, Morel, ex err.
? fuligineus, Morel, 1845.
b. rufescens, Cllge., 1893.
c. olivaceus, Cllge., 1893.
d. nigrescens, Cllge., 1893.
e. griseus, Cllge., 1893.
f. simrothi, Ckll.
373. A. l. hispanicus, Simr., 1886.
374. A. l. dasilvæ, Poll., 1887.
375. A. l. nobrei, Poll., 1889.
ater (pars), Morel, ex err. 1845.
375a. A. flagellus, Cllge, 1893.[4]
a. phillipsi, Cllge., 1893.
376. A. subfuscus, Drp., 1805.
cinctus, D. & M., 1852.
fasciatus (pars), Nilss.
a. cinereofuscus, Drp.
incommodus, Hutt.
i. typus, Poll., 1890.
ii. krynickii, Kal., 1851.
b. cinereus, Loc. sine descr.
c. griseus, Cllge.
? *fasciis-obsoletis*, Cllge. sine descr.
d. albus, Esm.
e. rufofuscus, Drp.
? rufescens, Loc. sine descr.
i. mabillianus, Bgt.
ii. aurantiacus, Loc. sine descr., Ckll.
iii. rufescens, Cllge., 1892.
iv. ardosiarum, Colb.
f. succineus, Bouil., 1836.
flavescens, Cllge.
i. gaudefroyi, Mab., 1870.
? olivaceus, Schm., 1856.

[4] Described since this list was written, W.E.C.

g. lateritius, Cllge., 1892.
h. alpestris, Poll., 1890.
? fuscescens, Loc. sine descr.
i. nigricans, Poll., 1887.
j. vormanni, Loens., 1890.
k. nivalis, Kock, 1878.
l. brunneus, Lehm.
m. atripunctatus, D. & M., 1852.
n. medius, Jens., 1872.
o. quadrifasciatus, Jens., 1872.
p. polloneræ, Pini, 1884.
? *q.* limacopus, Wst., 1871.
? *r.* euthymeanus, Flor., 1886.

377. A. s. fuscus, "Müll.," Poll.
b. boettgeri, Poll.
c. stabilei, Poll.
? *d.* citrinus, Wst.

378. A. s. bavayi, Poll., 1887.

379. A. s. pegorarii, L. & P., 1882.

380. A. flavus, Nilss., 1882. (? Müll.)
campestris, Mab., 1868.
melanocephalus, Wst., ex err.

381. *A. rubiginosus*, Baud.
b. nigricans, Baud.

382. *A. rupicola*, Mab.

383. *A. tenellus*, Millet, 1854 (? 1859).
b. albidus Baud., 1871.
c. oresiaecus, Mab., 1870.
? *d. sourbieui*, Fagot., 1884.

384. A. occidentalis, Ckll., 1893.

385. A. hortensis, Fér., 1819.
? concavus, Brard, 1815.
fuscus, (pars) Moq., ex err.
? fallax, Sterki, 1882.
a. fasciatus, Moq., 1855.
i. typus, Poll.
ii. niger, Moq.
iii. alpestris, D. & M.
iv. pyrenaicus, Moq.
v. albipes, Ckll.
vi. dorsalis, Moq.
vii. pelophilus, Mab., 1870.
? limbatus, Moq., 1855.
fasciatus, Kick., 1830.
b. griseus, Moq.
c. cæruleus, Cllge.
d. distinctus, Mab.
e. virescens, Moq.
f. nemoralis, D. & M.
g. pallidus, Roeb. sine descr.
h. luteus, Baud.
i. subfuscus, C. Pfr., 1821.
i. rufescens, Moq.
? ii. *fallax*, Ckll.

386. A. h. celticus, Poll., 1887.

387. *A. h. anthracius*, Bgt., 1866.

388. A. cottianus, Poll., 1887.

389. A. nilssoni, Poll., 1887.
hortensis, Malm, ex err.

390. A. alpinus, Poll., 1887.
? alpicola, Fér., 1823.
b. aureus, Less., 1881.

391. A. intermedius, Norm., 1852.
? flavus, Müll., 1774.
? aureus, Gmel., 1778.
? melanocephalus, F. Big. in Fér., 1822.
tenellus, Heyn. ex err., 1861.
bourguignati, Mab., 1867 (*Geomal.*).
hiemalis, Drouet, 1867.
mabillei, Baud., 1868.
mabillianus, Baud., 1864.
minimus, Simr., 1885.
vendeanus, Let., 1869.
a. normalis, Moq.
b. pallidus, Moq.
c. albidus, Moq.
d. plumbeus, Cllge., 1892.
e. apenninus, Poll., 1889.

392. A. i. paladlhianus, Mab., 1867.
verrucosus, Brev., 1881.
? moitessicrianus, Mab., 1867.

393. A. i. mollerii, Poll.

394. A. pascalianus, Mab., 1868.
fuscatus, Morel., ex err., 1845.

395. *A. lineatus*, Risso, 1826.

396. *A. austenianus*, Nev. sine descr.

397. A. fasciatus (pars), Nilss. 1822.
? alpicola (pars), Fér.
marginatus, Kickx., 1837.
circumscriptus, Johns., 1828.
leucophæus, Norm., 1852.
griseus, Bgt. ex err., 1864.
dupuyanus, Bgt., 1864.
bourguignati, Mab., 1868.
? bayani, (pars) Jouss., 1876.
b. miser, Poll., 1887.
i. griseus, Cllge., 1892.
c. neustriacus, Mab., 1868.
i. flavescens, Cllge., 1892.

ii. subfuscus, Roeb., 1892.
d. atripunctatus, Ckll., 1891.
398. A. f. subcarinatus, Poll., 1885.
399. A. f. ambiguus, Poll., 1889.
b. armoricanus, Poll., 1889.
c. subalbidus, Ckll., 1891.
400. *A. paladilhianus*, Mab., 1870.
401. A. timidus, Morel.
? montanus, Mab.
401a. A. elongatus, Cllge., 1893.[5]

ARIUNCULUS, Lessona, 1881
402. A. speziæ, Less.
403. A. mortilleti, Less.
a. flavus, Less.
typus, L. & P.
b. aurantiacus, Less.
c. monachus, Less.
d. pullatus, Less.
404. A. camerani, Less.

Sect. ICHNUSARION, Poll. 1890.
405. A. isselii., Bgt.

GEOMALACUS, Allm.
406. G. maculosus, Allm., 1846.
lusitanus, Da Silva, 1873.
maculatus, Gray ex err., 1855.
andrewsi, Mab.
a. typicus, Heyn.
b. allmani, Heyn., 1873.
c. verkruzeni, Heyn., 1873.
d. fasciatus, Ckll., 1890.

Sect. ARRUDIA, Poll., 1890.
407. G. oliveiræ, Simr.
408. G. anguiformis, Morel, 1845.
anguiformis, Gray ex err., 1855.
viridus, Morel.
b. squammatinus, Morel., 1845.

LETOURNEUXIA, Bgt.
409. L. numidica, Bgt.
410. *L. moreleti*, Hesse.
411. *L. atlantica*, Bgt.
412. L. tournieri, Poll., 1890.
[413. L. pliocenica, Sacco, 1885.]

TETRASPIS, Hag., 1885.
414. *T. letourneuxi*, Hag., 1885.

ANADENUS, Heyn.

Sect. ALTIVAGI, Ckll.
415. A. altivagus, Theob.
giganteus, Heyn.
? modestus, Theob.
416. A. schlagintweiti, Heyn.

Sect. SULCATI, Ckll.
417. A. jerdoni, G.-A., 1882.

Sect. incert.
418. A. blandfordi, G.-A., 1882.
419. A. insignis, G.-A., 1882.

ANADENULUS, Ckll., 1890.
420. A. cockerelli, Hemph., 1890.

PROPHYSAON, Bld. & Binn.
Limacarion, Cooper.

Sect. TYPICI, Ckll.
421. P. andersoni, Coop., 1872.
b. hemphilli, B. & B.
c. pallidum, Ckll., 1891.
d. marmoratum, Ckll., 1892.
e. suffusum, Ckll., 1893.
422. P. pacificum, Ckll.
flavum, Ckll.

Sect. CÆRULEI, Ckll.
423. P. cæruleum, Ckll.
b. dubium, Ckll.

Sect. FASCIATI, Ckll.
424. P. fasciatum, Ckll. in W. G. Binn., 1890.
andersoni, W. G. Binn., ex err.
b. obscurum, Ckll, 1893.
425. P. f. humile, Ckll.

Sect. PHENACARION, Ckll.
426. P. foliolatum, Gould.
427. P. hemphilli, W. G. Binn.

ARIOLIMAX, Mörch.
428. A. columbianus, Gould, 1851.
a. typicus, Ckll., 1891.
b. stramineus, Hemph., 1891.
c. maculatus, Ckll. in W. G. Binn., 1890.
d. niger, Ckll., 1891.
429. A. c. californicus, Coop., 1872.
b. maculatus, Ckll., 1891.
430. A. c. costaricensis, Ckll., 1890.
431. *A. c. hecoxi*, Weth., sine descr.

HESPERARION, Simroth., 1892.
432. H. niger, Coop., 1892.
b. maculatus, Ckll., 1892.
? *c.* andersoni, W. G. Binn.
433. H. hempelli, W. G. Binn.
b. maculatus, Ckll. in W. G. Binn., 1890.

PHILOMYCINÆ, Ckll., 1891.

[5] Described since this list was written.—W. E. C.

LIMACELLA, Blainv., 1817. (nec Brard.).
Limacellus, Fér., 1821.
Philomycus, Raf., 1820.
Tebennophorus, Binn., 1842.
Pallifera, Morse., 1864.
Meghimatium, V. Hass., 1824.
Incillaria, Bens., 1842.
Eumelus, Raf., 1820.

434. **L. carolinensis**, Booc.
carolinianus, De Roissy.
togata, Gould.
marmorata, De Kay., sine descr.
quadrilus, Raf.

435. **L. nebulosa**, Ckll., 1890.
? **nebulosa**, Raf., 1820.
? **flexuolaris**, Raf., 1820.

436. **L. pennsylvanica**, Pilsb.

437. **L. dorsalis**, Binn., 1842.
? *oxurus*, Raf.
? *oxyurus*, Gray ex err.
? *fuscus*, Raf.
? *lividus*, Raf.

438. **L. wetherbyi**, W. G. Binn.
439. **L. hemphilli**, W. G. Binn.
440. **L. crosseana**, Streb.
441. **L. sallei**, Cr. & Fisch.
442. **L. aurata**, Tate.
443. **L. costaricensis**, Mörch.
444. **L. lactiformis**, Blainv., 1817.
lactescens, Fér. ex err.
elfortiana, Blainv., 1825.
445. **L. bilineata**, Bens., 1842.
446. **L. confusa**, Ckll., 1890.
bilineata, Kef. ex err.
447. **L. chinensis**, Ckll., 1890.
bilineata, Heude ex err., 1882.
448. **L. formosensis**, Ckll., 1890.
449. **L. campestris**, G.-A., 1876.
450. **L. striata**, Hass., 1824.
451. **L. picta**, Stol.
452. **L. monticola**, G.-A., 1876.
453. *L. reticulata*, v. Hass.
454. *L. cylindracea*, Fér.
455. **L. australis**, Bergh.

VERONICELLIDÆ, Gray, 1840.

VERONICELLINÆ, Ckll., 1891.

VERONICELLA, Blainv.
Vaginula, Fér., 1821.
Vaginulus.

(i.) Species of the Indian Region.

456. **V. alte**, Fér.
457. **V. frauenfeldi**, Semper.
458. **V. maculata**, Temp.
459. **V. reticulata**, Wst., 1885.
460. **V. sarasinorum**, Simr., 1892.

(ii.) Species of the Indo-Chinese Peninsula.

461. **V. birmanica**, Theob.
b. pallidula, Fea., sine descr.
462. **V. siamensis**, Mart.
463. **V. hasselti**, Mart., 1867.
464. **V. proxima**, Tap.-Can.
465. **V. andersoniana**, Tap.-Can.
466. **V. bocourti**, Roch., 1885.
467. **V. chandoensis**, Roch., 1888.
468. **V. titanotona**, Roch., 1888.
469. **V. hennigi**, Simr.

(iii.) Species of Malay Peninsula.

470. **V. carusi**, Simr.

(iv.) Species of Chinese Region.

471. **V. crosseana**, Mab. & Le M.
472. **V. chinensis**, Möll., 1881.
473. **V. fargesiana**, Heude.
474. **V. patriatiana**, Heude.
475. **V. carbonaria**, Heude, 1890.
476. **V. pictor**, Heude, 1890.
477. **V. lemonieriana**, Heude, 1890.
478. **V. reinhardti**, Semp., 1885 (1886?).

(v.) Species of Philipine Is.

479. **V. luzonica**, Gray.
480. **V. zamboangensis**, Semp.

(vi.) Species of Borneo.

481. **V. wallacei**, Issel, 1874.
?482. **V. stuxbergi**, Wst., 1885.
sternbergi, Ed. Mal. Bl., err. typ.
483. **V. flava**, Heyn.
484. **V. idæ**, Semp.

(vii.) Species of Sumatra.

485. **V. schneideri**, Simr., 1892.
486. **V. sumatrensis**, Simr., 1892.
487. **V. weberi**, Simr., 1892.

(viii.) Species of Java.

488. **V. lævigata**, Cuv.
489. **V. bleekeri**, Kef., 1865.
490. **V. strubelli**, Simr., 1892.
491. **V. cockerelli**, Simr., 1892.
492. **V. marshalli**, Simr., 1892.

493. **V. platei**, Simr., 1892.
494. **V. newtoni**, Simr., 1892.
495. **V. maculosa**, V. Hass.
496. **V. mollis**, V. Hass.
?497. *V. porulosa*, V. Hass.
?498. *V. punctata*, V. Hass.
499. **V. viridialba**, V. Hass.
(ix.) Species of Moluccas, Celebes, &c.
500. **V. chavesi**, Simr., 1892.
501. **V. bocagei**, Simr., 1892.
502. **V. graffi**, Simr., 1892.
503. **V. vivipara**, Simr., 1892.
(x.) Species of New Caledonia.
504. **V. plebeia**, Fisch., 1868.
(xi.) Species of Queensland.
505. **V. leydigi**, Simr.
506. **V. hedleyi**, Simr.
(xii.) Species of the Seychelles.
507. **V. seychellensis**, Fisch., 1872.
508. **V. bicolor**, Heyn., 1885.
509. **V. elegans**, Heyn., 1885.
510. **V. tristis**, Heyn., 1885.
511. **V. parva**, Heyn., 1885.
(xiii.) Species of Rodriguez.
512. **V. rodericensis**, E. A. Sm.
(xiv.) Species of Mauritius.
513. **V. punctulata**, Fisch.
514. **V. trilineata**, Semp.
515. **V. andreana**, Semp.
(xv.) Species of Bourbon.
516. **V. maillardi**, Fisch., 1872.
(xvi.) Species of Madagascar.
517. **V. subaspera**, Fisch.
518. **V. verrucosa**, Heyn., 1885.
519. **V. margaritifera**, Heyn, 1885.
520. **V. sulfurea**, Heyn., 1885.
(xvii.) Species of Comoro Is.
521. **V. picta**, Heyn.
522. **V. grossa**, Heyn.
523. **V. comorensis**, Fisch., 1883.
(xviii.) Species of East Africa.
524. **V. petersi**, V. Mts.
525. **V. koellikeri**, Semp.
526. **V. brevis**, Fisch., 1872.
(xix.) Species of South Africa.
527. **V. natalensis**, Rapp.
528. **V. maura**, Heyn.
529. **V. saxicola**, Ckll.
(xx.) Species of West Africa.
530. **V. liberiana**, Gld.
531. **V. pleuroprocta**, V. Mts.
(xxi.) Species of Princes Is.
532. **V. myrmecophila**, Heyn., 1868
(xxii.) Species of Bermuda.
533. **V. schivelyœ**, Pilsbry, 1890.
(xxiii.) Species of Florida.
534. **V. floridana**, Binn.
(xxiv.) Species of Cuba.
535. **V. cubensis**, Pfr., 1840.
occidentalis, Arango, ex err.
(xxv.) Species of Jamaica.
536. **V. sloanii**, Cuv.
lævis, Blainv.
b. **coffeæ**, Ckll., 1893.
537. **V. virgata**, Ckll., 1892.
538. **V. jamaicensis**, Ckll., 1892.
539. **V. dissimilis**, Ckll., 1892.
(xxvi.) Species of Porto Rico.
540. **V. portoricensis**, Semp.
(xxvii.) Species of Lesser Antilles.
541. **V. occidentalis**, Guild.
542. **V. punctatissima**, Semp.
543. **V. dubia**, Semp.
544. **V. morchii**, Semp.
545. **V. luciœ**, Ckll.
(xxviii.) Species of Central America.
546. **V. moreleti**, C. & F., 1872.
547. **V. mexicana**, S. & P.
548. **V. olivacea**, Stearns, 1871.
549. **V. strebelii**, Semp.,
mexicana, Semp. (nec S. & P.).
(xxxix.) Species of Eastern S. America.
550. **V. solea**, D'Orb.
b. **bonariensis**, Strob.
551. **V. tuberculosa**, V. Mts., 1868.
552. **V. paranensis**, Burm.
553. **V. multicolor**, Semp.
554. **V. taunaysii**, Fér.
555. **V. fusca**, Heyn.
556. **V. langsdorfi**, Fér.
557. **V. aberrans**, Heyn., 1885.
558. **V. angustipes**, Heyn., 1885.
?559. *V. reclusa*, Allemao, 1859.
560. **V. jordani**, Simr., 1892.
561. **V. paraguensis**, Simr., 1892.
562. **V. taylori**, Simr., 1892.
563. **V. cærulescens**, Semp.
564. **V. bielenbergii**, Semp.
565. **V. immaculata**, Semp.
566. **V. galatheœ**, Semp.
567. **V. boettgeri**, Semp.
568. **V. variegata**, Semp.
569. **V. behnii**, Semp.

570. **V. lamellata**, Semp.
571. **V. marginata**, Semp.
572. **V. kjellerupii**, Semp.
573. **V. kroyeri**, Semp.
574. **V. martensii**, Semp.
(xxx.) Species of Western South America.
575. **V. limayana**, Less.
576. **V. andensis**, Mill.
b. **cephalophora**, Mill., 1879.
c. **quadrocularis**, Mill., 1879.
577. **V. boetzkesi**, Mill., 1879.
b. **complanata**, Mill., 1879.
578. **V. arcuata**, Mill., 1879.
b. **teres**, Mill., 1879.
579. **V. atropunctata**, Mill., 1879.
580. **V. linguæformis**, Semp.
581. **V. marianita**, Cousin, 1887.
582. **V. adspersa**, Heyn, 1885.
583. **V. gayi**, Fisch., 1872.
584. **V. nigra**, Heyn.
585. **V. chilensis**, Leipzig Mus. MS., Simr., 1891.
586. **V. decipiens**, Semp.
(xxxi.) Species of uncertain locality.
587. **V. kraussii**, Fér.
588. **V. kreidelii**, Semp.
589. **V. telescopium**, Semp.
590. **V. voigtii**, Semp.

Subg. **IMERINIA**, Ckll., 1891.

591. **V. grandidieri**, C. & F., 1871.

LEONARDIA, T.-Can.

592. **L. nevilliana**, T.-Can.
? *OTHELOSOMA*, Gray, 1869.
593. *O. symondsii*, Gray.

Subf. **VAGINULINÆ**, Ckll., 1891.

RATHOUISIA, Heude.

594. **R. sinensis**, Heude, 1882.
leonina, Heude.
595. **R. tigrina**, Heude.
596. **R. pantherina**, Heude.

ATOPOS, Simr., 1891.
Vaginulus, W. G. Binn., 1879.

597. **A. semperi**, Simr., 1891.
598. **A. strubelli**, Simr., 1891.
599. **A. leuckarti**, Simr., 1891.
600. **A. trigonus**, Semp.
601. **A. pulverulentus**, Beus.
sanguineus, "Stol."

PRISMA, Simr., 1891.

602. **P. tourannense**, Eyd. & Soul.
603. **P. prismaticum**, T.-Can., 1883.
604. **P. heynemanni**, Simr., 1891.
605. **P. australe**, Heyn.

JANELLIDÆ, Gray, 1853.

JANELLINÆ, Ckll., 1891.

JANELLA, Gray in M. E. Gray (nec Grat.).
Athoracophorus, Gould, 1852.

606. **J. bitentaculata**, Q. & G., 1832.
b. **antipodarum**, Gray, 1853.

Sect. **KONOPHORA**, Hutton.
Conophera, Tryon ex err.

607. **J. marmorea**, Hutt., 1879.
608. **J. marmorata**, V. Mts. MS., Simr.

Sect. **PSEUDANEITEA**, Ckll., 1891.

609. **J. papillata**, Hutt, 1879.
610. **J. verrucosa**, V. Mts. MS., Simr.
b. **nigricans**, V. Mts. MS., Simr.
c. **fuscata**, V. Mts. MS., Simr.
fasciata, V. Mts. MS., Suter.

NEOJANELLA, Ckll., 1891.

611. **N. dubia**, Ckll., 1891.

ANEITELLA, Ckll., 1891.

612. **A. virgata**, E. A. Sm., 1884.

ANEITEA, Gray, 1860.
Aneiteum, W. G. Binn, ex err.
Triboniophorus, Humb., 1863.

613. **A. graffei**, Humb., 1863.
schutei, Kef.
b. **krefftii**, Kef., 1865.
c. **rosea**, Hedley, 1892.
614. **A. macdonaldi**, Gray, 1860.
615. **A. hirudo**, Fisch., 1868.
616. **A. modesta**, C. & F., 1870.

HYALIMACINÆ, G.-A., 1882.

HYALIMAX, H. & A., Ad., 1855.

617. **H. maillardi**, Fisch., 1867.
618. **H. mauritianus**, Raug., 1827.
mauritius, Fér., 1827.
mauritii, Woodw., ex err.
619. **H. perlucidius**, Q. & G., 1832.
pellucidus, Tryon, ex err.

Sect. **JARAVA**, G.-A., 1882.

620. **H. andamanicus**, G.-A., 1882.
b. **punctulatus**, Ckll., 1890.
621. **H. reinhardti**, Mörch, 1872.
622. **H. viridis**, Theob., 1864.

SUCCINEIDÆ, W. G. Binn.
em Fischer.
OMALONYX, D'Orb.
Homalonyx, Agass., 1847.
Amphibulima, (pars) Beck, 1837.
Helisiga, (pars) Ffr., 1855.
623. **O. unguis**, Fér.
matheronii, Pot. & Mich.
? *b.* **felina**, Guppy.
624. **O. guadeloupensis**, Less.
? **antillarum**, Grat.
625. **O. patera**, Döring.
626. **O. gayana**, D'Orb.
627. **O. convexa**, Mart., 1868.
? Subg. *PELTA*, Beck.
628. **O. cumingi**, Beck.

NOTES.

1 *c*. It is a matter of opinion whether *maculatus* (Leach) or *krynickii* should take priority.

1 *e*. The form *maculatus*, Pic., is hardly distinct from *punctatus*, Esm.; of course, Picard's name has priority, but it is not the same as *maculatus*, Leach.

1 *f*. Moquin-Tandon is the author of this variety, strictly speaking.

1 *q*. I have seen the type of *megaspidus* in the British Museum. The external mouth-parts are those of *maximus*, not of *flavus*; so also the reticulation, &c.

1 *r*. *strobeli*, as I have identified it, is only a pale or semialbine form of *maximus*.

1 *g'*. *subunicolor*, Simroth I have seen no description of this.

2-8. Subspecies or races not studied by me, and of quite minor rank.

9. *cinereo-niger*. After all the discussion that has taken place, I feel somewhat diffident about adding more. For my own part, I have never been at a loss to identify *cinereo-niger* by external marks, even when the sole has been unicolorous. Yet it is only fair to state that an example from Wales, which I was strongly persuaded was *cinereo-niger*, though the sole was not banded, was at Leeds referred to *maximus*.[6] Probably the specimens are still preserved there, and if it is really *maximus*, I must retract the above statement about the identification of *cinereo-niger*. This slug was recorded by Mr. Fenn as *cinereo-niger* var. in *Journ. of Conch.*, 1887, p. 198 (see also p. 137). In the British Museum there is a large *cinereo-niger*, entirely white (var. *albus*, Paasch.).[7]

[6] In all probability this was *cinereo-niger*.—W. E. C.

[7] It would be interesting to know in what manner the var. *albus*, Am Stein, of *L. maximus*, L., differs from this var. *albus* of Paasch.—W.E.C.

As it seems to me, the real question of the specific or subspecific validity of *cinereo-niger* is not solved by the statements made by Messrs. Roebuck and Collinge, and it still remains to be asked, can both *maximus* and *cinereo-niger* be obtained from eggs laid by a single slug of either kind? If not—and I do not believe myself that they could—*cinereo-niger* is a valid subspecies or species. Then, if it be found (as seems to be the case) that *cinereo-niger*, thus distinct, intergrades with *maximus* in certain localities, it is not a species but a subspecies, and that, I believe, is its proper rank.

Of course it follows from this way of looking at the matter, that some of the older and more distinct varieties of horses, dogs, &c., known to have developed under domestication, are subspecifically distinct, and this, I think, is a just conclusion.

10. I have restored the name *geographicus*, as it no doubt belongs to *dacampi*, and is older and also appropriate.

13. *L. fungivorus* is placed by its author in *Malacolimax*, but Simroth says it is a young *cinereo-niger* form!

21. Böttger described it as a variety of *maximus*, his name takes priority.

31. To *tenellus* have been referred *aureus*, Gmel., and *squammatinus*, Morel., but it appears that the first is an *Arion*, the second a *Geomalacus*.

31 *b*. I have seen no description of *griseus*.

34. *L. raymondianus*. Simroth has referred this name to a variety of *Amalia gagates*, but I can hardly believe he is right. Pollonera has recognised a true *Malacolimax* as *raymondianus*.

36. *L. nyctelius*. Mr. Pollonera has sent me this from Algeria. A species formerly called *nyctelius* by Simroth seems to be *subsaxanus*.

37. *L. valentianus*. According to Simroth, this is a race of *arborum* (*marginatus*). Mr. Pollonera sent me a specimen from Barcelona, and it seemed to me quite distinct from *marginatus*. However, so far as external marks went, I could see no specific difference between *valentianus* and *nyctelius*.

38. *L. fulvus*. Simroth suggests that this may be a yellow form of *tenellus*.

41. *L. marginatus*. I believe *sylvestris* is the same, but it is too poorly described to be certainly recognisable.

44b. Var. *umbrosus*, Phil. This name may be taken to represent a slight mutation like *maculatus*, Kal., but with the dark colouring more brown.

44 *q*. Var. *lineolatus*. Mr. Collinge must forgive me for saying that I am still quite puzzled about this form, owing to the yellowish tentacles. Will not its author give some further details about it?[8]

44 *r*. *canariensis*. This probably does not differ from the type. *L. canariensis* of Mr. E. A. Smith (P. Z. S,, 1849, pp. 276-78) is another thing altogether, being *Agriolimax agrestis*, v. *sylvaticus*, Moq., as I have satisfied myself by an examination of the original specimens. Dr. Simroth in his beautiful work on the slugs of Portugal and the Azores, has drawn some erroneous conclusions from the misidentification of *canariensis*.

44. *L. ehrenbergi*. Heynemann states that this is *flavus*. It was supposed to have no shell.

44. *L. megalodontes*, Q. and G. Found near Port Jackson, Australia. The Australian malacologists seem agreed that this is *flavus*.

57. Heynemann remarks of *phœniciacus* that Böttger thought it was *Agriolimax agrestis*, but from the figure it might be *variegatus (flavus)*.

59. *L. lineolatus*. The description reads like the young of a dark form of *flavus*.

65. *L. cobanensis*. Probably an *Agriolimax*.

68. *L. latus*. Fossil in the I. of Wight. *L. modioliformis* is also English.

71-77. *Eumilax*, having priority over *Paralimax*, must be used for the genus.

Amalia.—*Aspidoporus* is older than *Amalia*, and *Clytropelta* than *Lallemantia*; yet it would seem absurd to adopt these names, both founded on fictitious characters.

78 *b*. *typica*, Poll. This is in the British Museum from Bath. It is like *hewstoni*.

79. *A. plumbea* may appear either as a variety or sub-species, according to the locality; that is to say, in England it represents a geographical race or subspecies, but plumbeous specimens may occur where the type prevails, just as black

[8] It seems foolish to puzzle one's self over such a very minor colour variation as yellow tentacles. I have no further details to add to my original description. As its name indicates, it had a line on the sides of its body, and as such a form was not known, I thought it of sufficient importance to name.—W.E.C.

ones are occasionally found in England. All the species of the *gagates* group are very closely allied, and the validity of some is doubtful ; but they can hardly be studied in a satisfactory manner without much larger collections than are at present available in museums. Meanwhile, it seems best to keep them distinct, and to treat somewhat cautiously assertions of identity which are not backed by adequate comparison of specimens.[9]

97 *f. pallida*. I merely include this name as it has been published; it does not represent any distinct variety.

106. *A. pallidula*, Ckll., is a small form, distinguished from the young of *sowerbii* by its colour, its transparency, its high acute keel, and its non-attenuate tail. *A. cristata*, Kal., as figured by its author, is pale reddish-ochre, head and neck blackish, no sulcus visible on mantle—thus unlike *pallidula*. But Dr. Simroth has lately figured as *cristata* a slug which seems so like *pallidula* that they may well be the same thing. Hence, assuming that Dr. Simroth has correctly identified his slug, and that Kaleniczenko's figure was somewhat misleading, I place *pallidula* as a doubtful synonym of *cristata*.

113. = *Aspidoporus limax*, Fitz.

Agriolimax, 1868. This is a good test case for the law of priority, all the following names being prior to it.

(1.) *Deroceras*, 1820. There can be little doubt that *D. gracilis*, Raf., was *A. campestris*, Binn., but the description was inaccurate.

(2.) *Limacellus*, 1821, as quoted by Kreglinger, may be a mistake. *Limacellus*, as known to me in Férussac's writings, is Blainville's genus—a totally different thing.

(3.) *Krynickia*, 1839 (afterwards called *Krynickillus*, and also *Megaspis*), has been used for the *lævis* group of *Agriolimax*, but I do not see how this restriction can be justified. However, it included some species of *Agriolimax*.

(4.) *Malino*, 1855, was founded on *A. lombricoides*—a true *Agriolimax*—yet its author was under a mis-

[9] I have elsewhere (Conch. 1892, ii. p. 92) pointed out that in my opinion *A. plumbea* is but a colour variation of *A. gagates*. I fail to see any reason whatever why it should be regarded as specifically distinct from *A. gagates* any more than any of the other colour varieties. The anatomical evidence for the specific identity of a number of the *gagates* group is practically *nil*, and malacologists will do well to recognise only such whose anatomy has been fully described and figured. The constant splitting up of a species into subspecies, varieties, &c., is a practice I have little patience with, and in a difficult genus like *Amalia* it is only adding confusion to an already complicated study, and heaping up difficulties in the way of future workers.—W. E. C.

apprehension as to the generic characters, and placed the species of *Agriolimax* with which he was himself acquainted in *Limax*!

(5.) *Megapelta*, 1857. Also founded on a misconception of the generic characters; the species being known to the author by a drawing only. It certainly was an *Agriolimax* of the *lævis* group.

Of the above, not one was correctly defined, nor were the true generic characters mentioned, but it will be hard for those who believe in strict priority to overlook them all in favour of *Agriolimax*. *Limacellus*, as quoted by Kreglinger, may be safely put aside as a mistake, but I cannot now refer to the place cited. The correct synonymy of *Limacellus* seems to be:—

(1.) *Limacellus*, Fér., 1821 = *Limacella*, Blainv., 1817 = *Philomycus*.

(2.) *Limacellus*, Turt., 1831 = *Limacella*, Brard., 1815 = *Limax*.

There now remain four names, three of which were founded solely on slugs which were doubtless species of *Agriolimax*. In the case of *Deroceras* and *Megapelta* it is true the identity is not actually proven; but with *Malino* there can be no shadow of doubt. *Hydrolimax* (or *Deroceras* or *Megapelta*) is available for the *lævis* group, if that can be separated from the *agrestis* group in any satisfactory manner, which I doubt.[10]

120. *A. agrestis*. The mutations of the species are extremely numerous, and according to one's opinion, have been named too much—or too little. At all events, it is not difficult to find several mutations not yet named, which are as distinct as several of those named. Thus at Parkstone, Dorset, I found four mutations, none *exactly* agreeing with any described. Again, at Acton, Middlesex, D. B. Cockerell found five specimens representing three undescribed mutations, one of which was identical with one from Parkstone. Of course, these mutations are but slight—about equivalent in value to the band-variations of some *Helices*.

[10] There can be little doubt, I think, but that *Agriolimax* should remain, seeing not one of the prior genera mentioned was correctly defined. Future investigations upon the anatomy of the slugs will undoubtedly necessitate the re-describing of many genera, and I would venture to suggest that, instead of adopting a new term, the old one should be retained, and simply alter the name of the author—*e.g.*, should the genus *Neojanella*, Ckll., 1891, be found upon anatomical examination to be distinct from any other genus of *Janellidæ*, I should retain the name *Neojanella*, adding to it the name of the author who first adequately described and figured the same.—W. E. C.

120 *d. tristis.* Moquin-Tandon describes his slug as banded, which seems to indicate that it may not be *agrestis*. If so, the form recognised as *tristis* in England will want a new name.

120 *g. typicus.* I have used the name for the ordinary immaculate forms, not necessarily within the strict definition of *typus*, L. and P. I did not originate the name, and believe it was first used by Roebuck as an amended form of *typus*, or by error for Lessona and Pollonera's term. Thus, Roebuck cites it as "*typica*" of Less. and Poll. in *J. of Conch.*, 1884, p. 252.[11]

120 *h. niger*, Morelet. I have not seen Morelet's description; Mr. Butterell described it under the same name.

120 *i. albidus*, Pic., *typus*, L. & P., and *cineraceus*, Moq., are but slight modifications of the grey immaculate form. So also *albitentaculatus*.

120 *k. l. rufescens*, L. & P., is obscurely spotted, but *rufescens*, D. & M., is immaculate; q. *ornatus*, Paul., is probably to be united with *rufescens* as given by Less. & Poll., and *ornatus*, Moq., seems only a further modification of the same type.

120 *f. w. s.* In the same way, the reddish *succineus*, Wst., taking brownish spots, becomes *obscurus*, Moq., and when the spots become darker and more distinct with the interstices of the rugæ usually darkened, we have *reticulatus*, Müll.

120 *t. x. veranyanus* and *punctatus* are practically equivalent it would seem.

120 *a'. b'. varians* and *sylvaticus*. Moq., are almost precisely the same. Draparnaud's *sylvaticus* is something altogether different.

120 *o. g'. melanocephalus*, Moq. (not *A. melanocephalus*, Kal.), is practically identical with *atritentaculatus*.

120 *e'. molestus*, Hutton. A form of the species found in New Zealand, descended from introduced examples. A specimen in the British Museum, which I examined, from Dunedin (Otago Univ. Mus.), seemed peculiar in its rather smooth body, its white ground-colour, and its blackish-brown tint above. Hutton (*Man. N.Z. Moll.*) states that the slug is quite variable, so that it will hardly be possible to identify *molestus* with any particular mutation.

[11] This is only another case of the careless manner in which Mr. Roebuck uses the nomenclature of foreign authors. I have always regarded the "*typica*" of Mr. Roebuck as an error. The above form in such a case should read *typicus*, Ckll. How can the type be a variety?—W. E. C.

120*p*. *xanthosoma*. This is stated to be yellowish-amber, so it might be identified with *rufescens*, D. & M. There is a more extreme form, bright orange above, of which Mr. Wilcock sent me a drawing, with the following description:—

"Body and mantle bright orange red, shading to greyish down the sides; tentacles and head fuscous." This might better be referred to *succineus*, of which Westerlund writes "*supra subrufus, subtus albus*." It was found in Yorkshire.

120 *r*. *bilobatus*. A curious malformation; the only specimen I have seen came from Philadelphia, U.S.A., sent by Mr. Pilsbry.

121. *virescens*, if the same, takes priority.

123. *Limax setchuanensis* is evidently an *Agriolimax*; the figure looks like *agrestis*.

131. *A. simrothi*. This name is proposed for the species indicated by Simroth in his work on the slugs of Portugal and the Azores as *drymonius*, Bgt., the true *drymonius* being an *Amalia*.

148. *A. hanryanus*. May not this be a form of *agrestis*.

150. *pallens*; see *Port.-Azor.-Faun.*, p. 313. Is it a slip for *pallidus*?

152. *A. nitidus*. According to Simroth, Bourguignat's *brondelianus* is a species similar to *nitidus*, but Pollonera thinks differently.

154. *A. mentonicus*. Tryon refers this to *agrestis*, but it seems rather to be some form of *lævis*, or allied thereto.

158-170. Simroth is disposed to refer all these to *lævis*, but nevertheless they show some distinctions among themselves. Certainly when one examines many specimens it becomes exceedingly difficult to draw specific lines; and from any point of view, no doubt to have six names for the Central American forms, and three for those of South America, is quite unnecessary. In North America there were three nominal species in the books for some time, but as soon as they could be sufficiently compared, it was seen that they were at best only varietally distinct. A more recently discovered species from the Pacific coast of North America (*hemphilli*) seems adequately distinct from *campestris*, but is, in my opinion, a variety of *A. berendti* of Central America.

158. *A. rarotonganus*. In the British Museum are specimens from Rarotonga (coll. Rev. Wyatt Gill; pres. by Sir J. Lubbock)

and New Caledonia, which appear to be veritable *rarotonganus*,* but are not, so far as I can judge, the same as *lævis*. The Rarotonga slug looks like *agrestis*, but one of the New Caledonia ones has the ground-colour dark, as in *campestris*. Without dissection it would be very difficult to make any positive assertion about their identity, but it seems possible that they may represent a distinct species.

170. *A. queenslandicus*. According to Dr. Simroth this is *lævis*.

166 *f.* *nigrescens*. Merely a mutation; dark, blackish or brownish-grey, mantle mottled with darker, back obscurely mottled, tentacles blackish, central area of sole darker than lateral areas. Washington, D.C., several examples (Dr. R. E. C. Stearns).

179-188. The species of *Parmacella* doubtless ought to be reduced, but it seems best to consider them distinct until they are definitely proved otherwise. Simroth in his work on the slugs of Portugal and the Azores, gives an interesting discussion of the matter, and concludes that *valenciennii*, *deshayesi*, *calyculata*, *callosa*, and *dorsalis* are all races of *olivieri*; which is, in fact, the only valid species of *Parmacella!*

The curious thing is, as Simroth points out, that whereas there is considerable difference of colour among the so-called species, those from the extreme east most resemble in this respect those of the extreme south-west.

I made a comparison of certain specimens in the British Museum, and found therein structural differences which may help to distinguish the species. The reticulation is not equally fine in all, and in order to test this point, I counted the transverse lines or grooves extending from mantle to foot in 10 millim. of the length of the slug.

P. olivieri from the Caucasus showed 5 lines in 10 mm.

P. v. maculata from Gibraltar showed 7 lines in 10 mm.

P. gervaisii from Gibraltar showed 7 lines in 10 mm.

P. deshayesii from Oran showed 11 lines in 10 mm.

Of course these measurements are from specimens in alcohol.

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* I made the following descriptive notes from these:—

(1). Rarotonga slug. 10 mm. long (in alch.); ochreous, body almost unicolourous, mantle dark. Respiratory orifice pale-margined. Medium area of sole *very* little wider than either lateral area. Hardly any keel. Structure like *agrestis*.

(2). New Caledonia slug. 16 mm. long (in alch.); mantle 7½ mm. long blackish or black, paler at sides, margin of respiratory orifice paler. Body rather well but obtusely keeled, very dark-blackish above, the reticulations marked black, more or less. Sole yellowish-grey, unicolorous, median area a little wider than either lateral. Ground colour dark, but structure like *agrestis*.

(3). New Caledonia slug. Differs from 2, in having ground-colour lighter.

P. deshayesii is like *maculata* externally, except for the finer reticulation and the absence of the black spots and streaks.

The Caucasus *olivieri* presents an extraordinary resemblance to *maculata* var. *olivacea*, but the reticulation is not so fine. In the specimens seen by me, the jaw of *maculata* was broad and rounded at the ends, whereas the jaw of *olivieri* had the ends tapering. Whether the above distinctions are constant can only be learned from the examination of a larger series than I have had access to.[12]

Selenochlamys. This genus is referred to *Trigonochlaminæ* in consequence of the statements made by Simroth in his work on the slugs of Portugal, &c.

Plutoniinæ n. subfam. The information given by Simroth (l.c.) shows the affinities of *Plutonia* to be with *Vitrininæ*; and consequently, according to my views, the genus must be placed in a new sub-family, which I call *Plutoniinæ*.

Plutonia. It appears that this name has also been used for a genus of trilobites.[13]

201 *b. simrothi*. This is the pale variety from Fayal; Simroth, l.c., taf. 1, f. 4.

207-211. My impression is that these five names represent but one species of *Mariaella*, but, as usual, I give them the benefit of the doubt. The oldest name is *infumata*.

218 *b. doriæ*. I do not know any good reason for considering this a species distinct from *beccarii*.

Austenia. I have removed from this genus various species wrongly included in it by authors (*e.g.*, *dimidiata*, *minuta*, *australis*), but the present list includes several which do not seem to be congeneric with *A. gigas*. I must leave it to those who are familiar with these species to finally settle where they should be placed.

249 *b. radha*. This may be a distinct species.

Parmella. I follow Mr. Hedley in placing this in the *Helicarioninæ*.

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[12] The separation of species upon the form of reticulation or number of rugæ is the very latest from the school of systematists. Some years ago I made some similar observations upon *Arion empiricorum*. I have not the figures by me, but I remember that there was a great variability shown. Simroth is in all probability correct in assuming *olivieri* to be the only valid species, but, at the same time a careful inquiry upon the structure of the other so-called species is very desirable.—W. E. C.

[13] If any change is necessary, the generic name had better be altered, seeing that it is preoccupied. I would therefore suggest that the subfamily, &c., read:—

Vitriplutoniinæ, Cllge.
= Plutoniinæ, Ckll.
Vitriplutonia, Cllge.
= Plutonia, Stab.

Elisolimax, new name for *Elisa*, Heyn., not *Elisa*, Reichenbach, 1854 (a genus of birds). *Elisia* has also been used twice (*Elisia*, Cantr., 1835, in Mollusca; *Elisia*, Big., 1857, in Diptera), but I should not myself consider this the same name as *Elisa*. I have elsewhere stated that I consider *Elisolimax* (*Elisa*) a valid genus.

Otoconchinæ. Mr. Hedley classes *Otoconcha* with the *Helicarioninæ*, further research having shown that its affinity with the *Binneyinæ* was illusory. According to the scheme of classification I have adopted, it forms a new sub-family. In Messrs. Hedley and Suter's recent list of New Zealand Mollusca, *Otoconcha* and *Helicarion* appear as genera of *Zonitidæ*, and Mr. Suter in a footnote expresses the opinion that *Otoconcha* is the same as the Philippine I. genus *Vitrinoidea*, Semper. As to this latter proposition I am not competent to form an opinion, but the reference is unlooked-for, and appears improbable on general grounds. However, Hutton remarks that *Otoconcha* seems allied to *Peltella*, and so far as superficial appearances go, *Peltella* is a good deal like *Vitrinoidea albajensis*, Semp. (see Semper's figure); judging therefore from external characters one might just as well say that *Otoconcha* is allied to *Vitrinoidea*—the more so, because we are led to believe from recent researches that it has at least some real affinity with it.

This question of *Otoconcha* and *Vitrinoidea* shows how entirely arbitrary is the line supposed to be drawn between the snails and the slugs.

300 *b.-h.* Possibly these varieties do not all pertain to *haliotidea* s. str. as now understood.

303. This is what was formerly called *T. bisulcata* var. *major*, and it may be a question whether it should not be called *T. major*, Gass. and Fisch. Similarly *Girasia butleri* is a name given to what was *Austænia gigas* var. *minor*, and strict priority would oblige us to write *G. minor*, G.-A. instead of *butleri*.

318. *T. aurigaster*. I know nothing of this beyond what has appeared in an advertisement on the cover of *Journ. of Conch.*

Daudebardia. It seems now to be generally recognised that *Libania* and the five names I have placed under it, as synonyms represent only one valid sub-genus. Westerlund proposed *Eudaudebardia* because none of the other names

were originally given to the group it represents as a whole, but all to separate parts of it. Believing that the rules of nomenclature demand the use of *Libania* (which seems to be the oldest name), I have sunk Westerlund's name as a synonym. Westerlund recognises nineteen species in the group; my list contains more, but probably a thorough revision, with ample material, might reduce the species by half.

Chlamydephorus. This differs by one letter from the similarly-named genus of mammals, and, from their derivation, the two names should be spelled alike. *Apera* is occupied in botany, but that is not generally considered to prevent the use of a zoological generic name. On the whole I prefer Mr. Binney's term with the original spelling, but those who use the list can follow whichever course they consider best. It is one of those cases which illustrate the difficulty of strictly applying the laws of nomenclature.

Phosphorax and *Plectrophorus*. One feels inclined to write Bosh, instead of Bosc, after some of these names! I merely insert them because they have been published; the generic and specific characters are purely imaginary. Gray suggested that *P. corninus* was founded on *A. ater*, some hardened mucus being taken for a shell.

366. *Arion ater*. It seems open to question whether the species or sub-species called *empiricorum* can be separated from the Linnean *ater*. Dr. Scharff (*Slugs of Ireland*, p. 539) states that he has examined specimens from Norway, and finds less difference between East Irish and Norwegian examples than there is between the West and East Irish.[14] Again, if these forms are to be sub-specifically separated, can we call either of them *empiricorum*? Linné (*Syst. Nat.* Ed. x. 1758, p. 652) includes under his *ater* the Scandinavian form, but he also refers to Lister's *Limax ater* as identical—and this is our English black "*empericorum*." Admitting, however, that *ater* can be used only for the Scandinavian race, we next come to *rufus*. *A. rufus*, L., is the *sub-rufus* of the *Fauna Succica*, which Pollonera gives as a doubtful synonym of *empiricorum*, but it is also Lister's *L. sub-rufus montanus*, which is the British form, and there is a reference to Aldrovandi's *Limax magna, colore rufo*, which is surely also the so-called *empiricorum*.*

[14] Was this not from an external examination *only*?—W. E. C.

* I regret that I cannot now examine Aldrovandi's work, to see whether this is so, but there can hardly be a doubt. For an interesting notice of this pioneer in the study of slugs (ob. 1605) see Jardine's Naturalists' Library, vol. xvii.—T. D. A. C.

Therefore, since we *know* that *rufus* was meant to include the red *empiricorum*, and only doubt whether it may not have included something different in "*sub-rufus*," it seems but reasonable to use *rufus*, L., in preference to Férussac's title.

Furthermore, even if we set aside the Linnean name as unavailable, *empiricorum* falls before *L. luteus*, Raz., 1879, and *L. succineus*, Müll., 1774—which represents its yellow variety.

366 *b. albus.* First described by Müller as *L. albus margine lutes* in 1763, but first named *albus* in accordance with the modern system of nomenclature, by Linné, *Syst. Nat.* ed. xii. (1767). I follow Pollonera in referring this to *ater* proper.

366 *b.* i-iv. These four forms named by Moquin-Tandon ought to be such as are found in France, and therefore belonging to *rufus* (*empiricorum*). But they exactly correspond both in character and the order in which they are given with Müller's four varieties (Verm. Hist., 1774, p. 4) of his *albus*, so they may be taken as based on the Müllerian descriptions, and not on specimens examined by Moquin-Tandon,

366 *f. marginatus.* Miss Esmark (*J. of Conch.*, 1812, p. 102) records var. *marginatus*, Moq., from Norway. If the Scandinavian slug is held distinct from the French one, this will be a variety of it, coloured like *marginatus*. It is to be observed, however, that Pollonero admits that some Scandinavian examples are veritable *empiricorum*, as distinct from *ater*. (Arionidæ, p. 5.)

367 *a. johnstonii.* So spelled by its author.

367 *b.* Gray (*Cat. Fulm. B. M.*, 1885, p. 54) quotes *Limax ruber*, Drap. I cannot now consult Draparnaud's work, but if the present variety was named *ruber*, of course *lamarckii* must fall.

367 *f. luteus.* I prefer this name, because Müller says of *succineus*, "*Rufo-fuscus vel succini coloris*"—thus including red-brown forms. I have been doubtful whether to cite the synonym *flavescens*, as it is by chance that Férussac uses a single term for the variety—as may be seen by comparison with his other citations of varieties, which are evidently intended as descriptive. The figure of *flavescens* is too red for *luteus* as strictly defined.

367 *f.* ii. *ferussackii.* So spelled by its author. This name and the two placed as synonyms of it belong to a greenish

subfasciate form, supposed to be the young of the yellow variety. Mr. Gain (*Sci. Goss.*, 1890, p. 45) remarks that the young of light-coloured varieties of this species show stripes a week or two after leaving the egg.

367 *k. scharffi.* Back black, sides yellow. Dr. Scharff records this from Ireland, and from what he states it appears to be quite common at Raheny, near Dublin. Although I am quite unable to understand Dr. Scharff's views about classification, and believe he equally fails to understand mine, or Dr. Simroth's (or did so when he last wrote on the subject), I may perhaps venture to give this form his name in recognition of the value of his work on Irish slugs. It happens that the forms I named *subreticulatus* and *elineolatus*, years ago, are but sub-varieties of this *scharffi*, but inasmuch as their names express peculiarities not necessarily inherent in the variety, I have disregarded what might seem the strict requirements of priority.

367 *m. bocagei.* Dr. Scharff figures a sub-variety of this, which he found in Ireland; and Mr. Collinge has written on the British representatives of *bocagei*. I think our forms should be separated as one or two sub-varieties, as the citation of the name *bocagei* simply may give rise to misunderstandings. (See *sulcatus.*)

367 *o. faciatus*, Seib. This is older than the *faciatus*, Ckll., having been published in *Mal. Bl.*, 1873, p. 190. I have no note of its peculiarities, and do not know whether it has any standing. Pollonera, in his revision of the genus, does not recognise it.

367 *p. mulleri.* This is Müller's variety, "*ater, carina dorsi pallide virente.*" The word "*carina*" can hardly be supposed to refer to any distinct keel, and so far as one may judge, the slug must be very similar to Dr. Scharff's Irish form of var. *bocagei*. Therefore, by strict priority, we should perhaps place *bocagei* as a sub-variety of *mulleri*—or it may be more correct to say that *bocagei* is the *mulleri*-like form of *sulcatus*.

367 *r. violescens.* This may well be the same as *hibernus*, but as the latter is claimed to be a distinct race or species, instead of a colour-variety, I give it the benefit of the doubt.

367 *s. bicolor.* This is not Moquin-Tandon's *bicolor*, but is based on a little slug 30 mm. long, supposed by some to be a form of *A. rufus*.

367 *t. rupicola.* Pollonera cites this as a doubtful species; it has been thought to be a form of *A. rufus.*

Very likely both this and *bicolor*, Broeck, really belong not to *A. rufus* but *A. subfuscus*, especially as Pollonera says he had some young *subfuscus* from France agreeing with *bicolor.*

371. *sulcatus.* I give this sub-specific value, as it differs somewhat from *rufus* of Central Europe. Simroth's *empiricorum* var. *bocagei* should probably be placed under *sulcatus*, in which case the *bocagei*-like forms (*mulleri*, &c.) of *rufus* must be separated from it. The question is whether we are to regard the name *bocagei* as applying merely to the peculiar colour of that slug, or to colour plus such slight structural differences as pertain to the Portugese race. So far as observed the pale-backed forms of *sulcatus* (*bocagei*) and *rufus* (*mulleri*, &c.) are not strictly identical, as may very well be seen by comparing the figures of Simroth and Scharff; and it seems very possible that *rufus* proper does not produce a colour-variety exactly like *bocagei*, nor *sulcatus* one like *mulleri.*

I have examined several examples of *sulcatus* in the British Museum, which were obtained by Mr. E. A. Allen. They are dark brown in colour.

372. *fuligineus.* If it could be proved that this was *lusitanicus*, of course it has priority. Pollonera suggests its affinity with *subfuscus*—but that species appears not to be found in Portugal. Simroth thinks it may be an immature form of *lusitanicus*, or a closely allied species.

372 *e. simrothi.* A small race from the Azores, which should probably be regarded as a sub-species. See Simroth, *Archiv. f. Nat.*, 1888, p. 227, and *Port. Azor. Faun.*, Taf. 4., figs. 12-13.

375. *nobrei.* Five specimens from Portugal in the British Museum (E. A. Allen) appear to belong to *nobrei*, but they vary among themselves. One seems like *sulcatus*, only black with a plumbeus sole; the other four have the rugæ divided more transversely, after the manner of *ater.* The exact particulars are as follows:—

1. Black, mouth pale, sole plumbeus, unicolorous, length 61½ mm.
2. Black, mouth pale, sole plumbeus, unicolorous, length 61½ mm.
3. Black, mouth hardly pale, sole olivaceous, length 51 mm.

4. Black, mouth not pale, sole olivaceous, unicolorous, length 46 mm.
5. Black, mouth hardly pale, sole with central zone pale olivaceous, lateral zones black, and each broader than central, length 37 mm.

So far as external characters go, specimens 1 and 2 should be *nobrei*, and 5 *dasilvæ*, while 3 and 4 seem somewhat intermediate. It is hard to believe they are not all mutations of one species.

376 *a-c.* The grey forms of *subfuscus* may be distinguished as follows:—

1. Banded—(a) bands distinct, sole yellowish = *cinereofuscus*.
   sole whitish = *typus*.
   (b) bands indistinct ... = *krynickii*.
2. Bands wanting ... ... = *griseus*.

"*fasciis-obsoletis*" (*Conch.*, 1893, p. 115) is perhaps only a descriptive term from a label written by Mr. Pollonera. There is an unnamed form, found by Mr. Wilcock, which is like *cinereofuscus*, but has an orange foot-fringe.

376 *e. g.* The reddish forms may be separated thus:

1. Banded:
   (*a.*) reddish, bands black = *rufofuscus*.
   (*b.*) yellowish, bands brown = *mabillianus*.
   (*c.*) orange = *aurantiacus*.
   (*d.*) brick-red = *rufescens*.
   (*e.*) greyish red, bands blackish = *ardosiarum*.
2. Bands wanting:
   (*a.*) yellowish, margin greyish = *gaudefroyi*.
   (*b.*) yellowish, margin yellow = *succineus*.
   (*c.*) brick-red, margin grey = *lateritius*.

Of course these forms run into one another. The form *aurantiacus*, as described by me, is bright orange, with the bands ill-marked (*Sci. Goss.*, 1886, p. 187). It may not be the same as Locard's undescribed form, but in all probability it is. The form *vormanni*, Loens, 1890, is almost precisely the same thing, perhaps tending rather to *succineus*. Var. *audosiarum* seems very close to Pollonera's later described v. *alpestris*, but the latter is sometimes with four bands.

According to Pollonera, *Arion olivaceus*, Schmidt, is the same as var. *gaudefroyi*. I have not had the opportunity of consulting Schmidt's description, but if the names are synonymous, *olivaceus* has many years priority.

Var. *flavescens*, Cllge., given as a synonym of *succineus*, is yellowish, with bluish sulci (*fide*, Collinge in litt.). The latter feature might possibly separate it as a sub-variety.[15]

377. *A. fuscus*. Müller's description is hardly sufficient to fix the exact race, as given by Pollonera. It seems that *fuscus*, sens. Poll., cannot be separated as a species from *subfuscus*; and if it is clear what Müller intended, the name *fuscus* must stand for the species, having priority.[16]

It may here be remarked that *A. fuscatus*, Fér., which has been thought to be a form of juvenile *A. ater*, is placed by Pollonera in the *subfuscus* group, though with a query.

378. *A. bavayi*. This, *nivalis* and *euthymeanus*, differ from *subfuscus* proper in the colour of the slime; but although this character has value in many cases, I do not think it can be held to indicate distinct species in this group, as it is known to be variable.[17]

385. *A. hortensis*. The name *concavus*, applied to the shell only, is earlier; but I do not see how it can be satisfactorily identified. Turton (1831) makes *Limacellus concava*, Brard., identical with *Limacellus variegatus*. The name *fallax*, Sterki, is also very uncertain in its application; its identity with *A. bourguignati* has been suggested.

385 *a*. vii. There is some difficulty here. I have not seen the description of *fasciatus*, 1830, but very probably it was merely a wrong identification of *fasciatus*, Nilss., 1822, in which case it has no standing. Pollonera cites *limbatus* as equivalent to *A. anthracius*, Bgt., but I do not know why, as Moquin's description precisely agrees with *A. hortensis*, v. *pelophilus*. In either case the name *limbatus*, Moq., cannot be given up, being earlier than *pelophilus* or *anthracius*.

The various forms of var. *fasciatus* are very similar, differing in the degree of darkening, and the colour of the sole and sides of foot. Thus *dorsalis* has only the dorsal region black, *fasciatus* proper shows distinct black bands,

[15] I have never described any such vars. as *rufescens* or *flavescens* of *A. subfuscus*, and these names should certainly not appear. In a letter to Mr. Cockerell I mentioned that I purposed describing such, but he pointed out that Locard had named a var. *rufescens* (sine descr.), so I purposed grouping all red forms under *rufofuscus*, Drp.; the new var. *lateritius*, however, turned up, and, being a much better marked one than any previously described, I grouped all *red* forms under it. I was not aware of the var. *succineus*, Bouill., when I used the term *flavescens*. All the yellow forms mentioned by Mr. Cockerell should be removed from the red ones.—W. E. C.

[16] In all probability Müller's *A. fuscus* is *A. subfuscus*, Drp. Signor Pollonera has very kindly favoured me with examples, and I agree with him that there is practically no difference in the anatomy from Draparnaud's species. There is, however, a doubt about Müller's species, and so Draparnaud's name should, in my opinion, be retained. *A. citrinus*, Wst., is probably the same thing.—W. E. C.

[17] The next step will probably be to separate species according to whether they are found on the north or the south side of the hedge!—W. E. C.

pyrenaicus is similar, but the ground-colour is dark grey, *niger* is so dark as only to leave the ground-colour appearing as pale bands. The form *albipes* has the sole white (slime colourless), *typus* has it yellow with the sides of the foot reddish, and in *pelophilus* the margin is decidedly red.

385 *g*, *pallida*, Roeb, *Naturalist*, Aug. 1887, p. 249, from Lincolnshire, was not described. Possibly it is the same as v. *nemoralis*, which is a very pale form, though more or less banded.

385 *h*. *luteus*. This seems to differ from *virescens* in being yellow, and having less pronounced bands.

390. *A. alpinus*, Poll., is doubtless a valid species, but the names *alpicola* and *aureus* are both older than Pollonera's designation. The figures of *alpicola* given by Férussac (pl. 8 A. f. 2-3) look like *A. subfuscus*, and since there are several different species of similar appearance, it may be impossible to decide what Férussac's slug really is. It might even be specifically identical with my *A. occidentalis*, which is certainly not *alpinus*.[18]

391. *A. intermedius*. It is doubtful which name should be preferred for this. I do not know *A. flavus*, Nilss., as distinguished by Pollonera, but if it has good structural characters, it seems almost hopeless to identify the names of older authors with it or *intermedius*. The oldest *flavus* is that of Müller, 1774, an inch and a half long, yellow, spotless, white beneath, found in Denmark and Norway. It has black tentacles. This is not *L. flavus*, Linn., of course, and all the slugs at that time being in *Limax*, Müller's name was altered to *aureus*, on account of pre-occupation, in 1778.

Now doubtless *flavus*, Müll., is an *Arion*, and if it is *flavus* sens Poll., or *intermedius*, the name must be used. Probably it will never be identified with certainty, and so it remains on the lists as a doubtful,—chiefly of importance because it prevents us from admitting a later *flavus* into the nomenclature. Consequently, although I leave *A. flavus*, Nilss., on the list, following Pollonera, it would be more correct to write:—

380. **A. campestris**, Mab.
flavus, Nilss., Poll. (? Müll.)

The name *campestris* applies strictly to an orange form, and the yellow form might be distinguished as a variety.

[18] Férussac's figure, if not *subfuscus* is very closely allied to it, whereas the *A. occidentalis*, Ckll., belongs to the *hortensis* group. In my opinion, it is *A. hortensis*.—W. E. C.

However, the slug is probably only subspecifically distinct from *A. subfuscus*, to which it may be allied through such forms as *vormanni*.

Simroth has shown that *intermedius* (*minimus*) is quite distinct from all *subfuscus* forms, and consequently whether *campestris* is a variety or sub-species of *subfuscus*, or an allied species, it ought not at the present day to be confounded with *intermedius*. But the outward similarity is such, that in dealing with the old descriptions we can hardly come to any certain judgment. Simroth has remarked, however, on the large size of Müller's *flavus*, which seems to distinguish it from *intermedius*.

Müller's *Arions* have always been a source of perplexity, and it may not be amiss to give some account of them for the benefit of those who cannot consult the original work.

O. F. Müller.—*Verm. Terr. et Fluv. Hist.*, vol. 2 (1774).

p. 2. *Limax ater*. The first variety is the Linnean *ater*. The fourth variety "*fusco-castaneus, ora lutescente; subtus albis*," is said to be *L. subrufus*, Linn.

p. 4. *Limax albus*. With four varieties.

p. 7. *Limax succineus*. "*L. supra subrufus, subtus albus*." "*Long.* 1½ *unc. Rufo-fuscus vel succini coloris est absque maculis aut cingulo. Tentacula majori superne nigra; inter haec linea obscura*." With reference to *L. subrufus*, L., Syst. 3, and Hill, Anim. p. 87, l. c. Müller here makes some mistake, as *L. succineus* and *L. ater* var. (as above) either should not be separated, or are not both *subrufus*, L.

p. 9. *Limax cinctus*. Two inches long, yellowish, amber above, white beneath, band and back with grey bands. What is this? A form of *subfuscus*? It is to be noted that this is the *first banded Arion ever named*, so whether it might be *subfuscus*, *intermedius*, *hortensis*, or what not, it has priority. Mörch has reported *A. cinctus* from Iceland.

p. 10. *L. flavus*, see above.

p. 11. *L. fuscus*. Reddish with black tentacles, white beneath. "*Linea laterali dorsoque nigricante*." Length 8 lin.

p. 11. *L. tenellus.* Genus uncertain; the name cannot be certainly applied to *Limax tenellus*, Auctt. It is greenish white, mantle yellowish, head and tentacles black.

391 *a-c.* Moquin-Tandon's *A. flavus*, with three varieties belongs to *intermedius*.

392. Priority demands the use of the earlier name *paladilhianus*, Simroth remarks on the close affinity of this with *intermedius*, and there seems nothing to separate it other than as a subspecies.

398-399. It is doubtful whether these two forms should take even sub-specific rank. In all probability, *circumscriptus*, placed as a synonym of *fasciatus*, is the same as *ambiguus*; and the forms named *subfuscus* (= the British representative of *neustriacus*) *flavescens* and *griseus* belong rather to *ambiguus* than to *fasciatus* proper, judging by the character of the keel, which in these is lost in the adult. For further observations see Mr. Collinge in *Conchologist*, 1892, vol. ii., pp. 77-80, where an alternative and possibly better arrangement of the varieties is given.[19]

402-403. Mr. Pollonera kindly sent me *A. mortilleti* from Rosazza, Piemont, and *A. speziæ* from Maccugnaga, Piemont. I did not dissect them, but judging from their appearance, they might well be the same species. Mr. Pollonera states (in litt.) that *A. speziæ* is smaller than *mortilleti*, and its mantle is also proportionately smaller.

Letourneuxia. Opinions differ about this. Heynemann in 1882 said it was scarcely distinct from *Arion*; Pollonera gives it as a sub-genus of *Geomalacus*; and now Simroth places it as a valid genus.

410. According to Simroth, *moreleti* may not be distinct from *numidica*.

413. *Geomalacus pliocenicus*, Sacco, from Piemont (Upper Pliocene), should from its locality belong to the *Letourneuxia* group, which may formerly have inhabited Italy, and have been driven south during the glacial epoch. From the fossil it would be impossible to decide this one way or the other, and the generic reference merely rests on the balance of probability.

[19] Having seen all the varieties excepting *d.* of this species 397, I do not agree with the arrangement adopted in the present list. *Miser*, Poll., is as distinct from *griseus*, Cllge., as *neustriacus*, Mab., or *atripunctatus*, Ckll., are; *flavescens*, Cllge., is a variety in which the yellow predominates. *neustriacus* is quite a different thing. The two are possibly brought closer together by *subfuscus*, Roeb. I say possibly, for I never could distinguish wherein this latter differed from *neustriacus*.—W. E. C.

Limacella. I have found it most perplexing to decide what name to use for this genus, but after much consideration have come back to my original (1890) decision in favour of *Limacella.* There can be no manner of doubt what Blainville's slug was, all the evidence duly considered; and his type may be seen any day in the British Museum. The whole question seems to turn on the acceptance or otherwise of the rule, "once a synonym always a synonym"—a rule which is of doubtful value, as it gives an importance to *pure synonyms* they ought not to have, and prevents their being dropped out of the classification. At first sight, the rule appears to be a convenient one, but its logical outcome is absurdity. For example, if I were at the present moment, without conceivable reason, to propose a new name for the present genus, according to the rule, this name could never be used for another genus afterwards! That is to say, an absurd proposal of this sort would bind down zoologists ever after to keep the name in their notes or indices lest they should duplicate it. And if valid genus were given this name the nomenclator might lose its authorship, because he was not aware that I had proposed a useless name years before! Some present difficulty is got over by the "once a synonym" rule, certainly, but it only heaps up trouble for those coming after. One may imagine the scientific author of the year 2000 on his travels followed by a large van. Passer-by: "How is it you have so much luggage?" Scientific man: "Oh, my luggage is in this hand-bag; that van contains the volumes of the dictionary of synonyms."

436. *Philomycus pennsylvanicus*, Pilsbry in litt., July 5, 1893. A medium-sized species with ribbed jaw. Will shortly be published by its author.

448. *L. formosensis.* I expect this is only a race or variety of *bilineata.*

447. *L. chinensis.* Doubtless Heude's slug is the same, but he says it grows to 6 or 7 cm. long, so my type was immature.

457. *V. frauenfeldi.* Probably a synonym of *alte.*

461. *V. birmanica.* Stoliczka in 1873 suggested that this and *V. hasselti* might both be synonyms of *V. mollis* (*Onchidium molle*, Hass.).

463. *V. hasselti.* Also in Borneo and Sumatra.

464-465. I find I have no note of the locality of these, but I think I have included them in the right series.

478. The date of publication of Semper's work (*Reisen in Arch. Phil.*, vii., Heft.), containing so many new names in *Veronicella*, is a matter of importance. It is dated 1885, but the British Museum copy is marked as received Jan. 15th, 1886. Probably, therefore, it was published early in January 1886.

483. *V. flava.* Also I. of Nias, off Sumatra.

514. *V. trilineata.* Perhaps a form of *maillardi.*

525. *V. koellikeri.* Probably a form of *petersi.*

526. *V. brevis.* In the British Museum is a coffee-brown species from Zanzibar (Dr. Kirk) which may not be specifically distinct from *brevis.*

527. *V. natalensis.* Gibbons (Q. J. C., 1879, p. 140) records a supposed variety of this from Mozambique, but surely it was a different species. It is said to be keeled.

529. *V. saxicola.* I have had this species in MS. for several years. It is 57 mm. long, 14 mm. broad, sole 6 mm. broad. ♀ orifice 2 mm. from sole and 32 from head. Sole not projecting posteriorly; mantle granulose, no raised warts, no sort of keel. Dark red-brown, unicolorous below, mottled-streaked with black or blackish above; a pale middle line slightly indicated posteriorly. When young paler, with a more obvious pale middle-line. Hab.; Port Elizabeth, under stones (A. E. Craven); in British Museum. Nearest, perhaps, to *V. petersi.* It is to be hoped that specimens which can be dissected will fall into the hands of some malocologist.

The following statistics of the position of the female orifice in African (and African-insular) species may be of service; but it must be remembered that the character is liable to some variation:—

V. myrmecophila	...	♀ orifice	·42	of total length	from head.
V. pleuroprocta	...	,, ,,	·46	,,	,,
V. subaspera, *V. tristis*		,, ,,	·47	,,	,,
V. grandidieri, *V. margaritifera*, *V. grossa*		,, ,,	·50	,,	,,
V. verrucosa	...	,, ,,	·52	,,	,,
V. parva	...	,, ,,	·53	,,	,,
V. petersi	...	,, ,,	·55	,,	,,
V. saxicola	...	,, ,,	·56	,,	,,

V. elegans *V. rodericensis*	} ♀ orifice	·57	of total length	from	head.
V. sulfurea	... ,, ,,	·58	,,	,,	
V. comorensis	... ,, ,,	·59	,,	,,	
V. natalensis	... ,, ,,	·60	,,	,,	
V. maura	... ,, ,,	·61	,,	,,	

533. *V. schivelyæ.* Perhaps a variety of *V. moreleti* introduced.

535. *V. cubensis.* Mr. Ponsonby has kindly copied for me the description of *Onchidium cubense*, and I judge from it that the slug is not identical with *V. occidentalis*, to which it has been referred.

Semper has described a slug from Cuba and Jamaica, which he referred with doubt to *V. sloanii*: I do not think it can possibly be that species, but it may be a variety of my *V. dissimilis*, with which it agrees in possessing two retractores penis.

536. *V. sloanii.* I have been rather perplexed which name to use for this slug, but have concluded that *sloanii* is preferable. The facts, which are not apparently well-known to authors, are as follows:—

(1.) Sir Hans Sloane found a *Veronicella* in Jamaica, which he figured very roughly in his work on the natural history of that island. We now know that there is more than one species of this genus in Jamaica; and there is nothing in Sloane's figure or very short descriptive notes, to prove that he saw one species only, or what species he observed. One might have made a guess, but no absolute certainty would have been possible, I imagine, from Sloane's record alone.

(2.) Cuvier in 1817 proposed the name *Onchidium sloanii* for this slug, giving no description, but merely a reference to Sloane's work. (*Regne Animal*, ii., 410-11.)

(3.) Férussac (*Hist. Nat. Moll.*, p. 82, pl. 7, figs. 8-9) gave an account of the creature, taken from Sloane, and placed it in *Veronicellus*.

(4.) In the meantime (1817) Blainville described a slug in the British Museum collection as *Veronicella lævis*. Afterwards (1825) he called it *Onchidium læve*, being apparently unaware that his genus *Veronicella* was distinct from *Onchidium*.

(5.) Heynemann (*Jahrb.*, 1885, p. 15) refers to the existence of the type of *lævis* in the British Museum, and mentions the fact that it was from Jamaica, and out of the Sloane collection. I have examined the specimen and can confirm Heynemann's statement. Thus it becomes evident that *sloanii* and *lævis* are one and the same thing, and since we have access to the type of *lævis*, the species can be identified. There are two smaller examples in another bottle in the Museum, with no locality stated, but probably from the same source.

The original specimen of *lævis* may be described as follows: —Entirely yellowish-white (Sloane has it white or ashy, with some blackish marks). Length, 50 mm.; breadth, 17½ mm. Breadth of sole, 7 mm. End of sole rounded, not projecting beyond mantle. Female orifice, 29 mm. from head and 2 mm. from sole. Anal (?) orifice, 6 mm. from end of sole, and 13½ mm. from female orifice. Respiratory orifice somewhat rounded in outline, close to, and a little to the right of, the end of sole, much as in other species. Mantle granulose. Penis projecting from male orifice, stout, with end blunt and rounded.

The anal (?) orifice deserves note. I think it is abnormal, and not a peculiarity of the species, that there should be such an orifice away from the respiratory orifice. In Sloane's figure an orifice is drawn in the middle of the sole —an evident mistake; but in Blainville's figure what looks like a female orifice too far back is really this anal (?) orifice.[20]

536 *b.* var. *coffeæ*. No adequate description of this has yet appeared, so I proceed to give one.

Slug when alive over 3¼ inches long, 31 mm. broad; when put into alcohol it exudes copious slime.

Adults not fusciate, young obscurely fusciate. Pale middle-line, usually very conspicuous. Colour above dark vandyke brown, obscurely marbled with darker. Skin minutely tuberculose. Beneath yellowish-white, spotless, sole more ochreous, end of sole blackish. Slime not milky in the living slug. Eye peduncles dark, inferior tentacles light. Sole narrow, not projecting beyond end of body.

[20] There can be no doubt but that this slug should be termed *sloanii*, as none of the later descriptions are any better than that given by Sloane. It yet remains for some one to describe and figure from better material the internal and external morphology. It is to be hoped, however whoever does this will retain the term *sloanii*, and simply alter the authority.—W. E. C.

Measurements in alcohol: breadth of body 21 mm., of sole 8 mm. Female orifice 2 mm. from sole, 33 from head, and 32 from hind end. Filiform glands numerous (more than 15), about 6 mm. long. Penis-sac cylindrical, curved into the form of a U; retractor single, long; penis cylindrical with a rounded head and terminal orifice.

537. *V. virgata.* I am now somewhat uncertain whether this is distinct from *sloanii* other than in a varietal sense. I have descriptions of several other Jamaican *Veronicellæ*, which I refrain from naming publically, hoping by further study to arrive at some clear decision with regard to their standing. It is possible to distinguish these forms by characters which seem not altogether unimportant, but without obtaining further statistics as to variation, it seems hazardous to propose them all as species.

V. virgata, in five of the six specimens originally found, had the female orifice ½ mm. from sole; in the sixth ¾ mm.; in *V. sloanii* (both type and var. *coffeæ*) it is 2 mm. from sole.

The female orifice is about the same distance from the middle in *virgata* as in *sloanii*, or perhaps rather more median. The six specimens of *virgata* had it respectively ·52, ·54, ·55, ·56, ·56, and ·57 of total length from head. In *lævis* (*sloanii*) type it is ·58.

As to breadth of body and sole, a *virgata* 50 mm. long had body 16 mm. broad and sole 6 broad—thus about 1 mm. narrower than the type of *lævis*.

The anal orifice of *virgata* is not separate from the respiratory orifice. The filiform glands of *virgata* are 9 mm. long, whereas in *sloanii* v. *coffeæ* they are about 6 mm.

The types of *virgata* were from Port Henderson, but Mr. Peckham found (and kindly gave me) a single specimen at Moneague.

538. *V. jamaicensis.* This must be regarded as founded on Semper's figure and description. The specimens I had, which I believed identical with it, I now think to be distinct, and probably not specifically separable from *virgata.*

541. *V. occidentalis*, Guilding. This slug is reputed to occur in Cuba, Hayti, Porto Rico, Dominica, Venezuela, Guiana, Martinique, St. Vincent, Guadeloupe, Jamaica, Trinidad, and perhaps St. Thomas. These records, however, are mostly worthless, being based on a supposition that almost

any *Veronicella* found in the West Indies might safely be dubbed *occidentalis*. I do not for a moment suppose that true *occidentalis* is found in the Greater Antilles, or *lævis* (*sloanii*),[21] which has been confused with it, in the Lesser.

The type of *occidentalis* was from St. Vincent, and the description indicates it as brown above, with dark brown points; pale beneath, with a few brown points towards the sides. Length, 65 mm.; breadth, 15 mm.

The description, by itself, would not enable us to decide about the identity of the species, but whenever specimens agreeing with it are brought from St. Vincent, it will be possible to record the structural character which may serve to indicate the species wherever found.

It seems quite probable that *occidentalis* really does range southwards to the continent. In the British Museum there are specimens from British Guiana (I. Quelch) which above are dark brown with black peppering, below pale purplish-grey with some black spots: these might well be *occidentalis*. Another question arises, with regard to *punctatissima*, Semper. This species is recorded from Porto Rico, St. Thomas, and Trinidad, and very likely occurs in most of the Lesser Antilles. I have said above that I do not suppose *occidentalis* to be a native of the Greater Antilles, but it may extend as far as Porto Rico, and have just such a distribution as *punctatissima*. In fact, it seems highly probable that it and *punctatissima* are one species, as has already been suggested by Mr. Guppy (*J. of Conch.*, 1893, p. 222). Semper himself indicated this possibility. Mr. Guppy, in the article quoted, records only one *Veronicella* from Trinidad, namely *occidentalis*. While this record is probably correct, his earlier writings (*Proc. Sci. Assoc. Trin.*, 1866; *An. Mag. N. H.* (3 ser.), vol. xvii., p. 47) seem to indicate the existence of a second species, described as dark grey. It is for the Trinidad naturalists to inquire whether this is not Semper's *V. cærulescens*, already known from Venezuela.

545. *V. luciæ*, Ckll. Length about 67 mm.; breadth $23\frac{1}{3}$ mm.; sole, breadth 11 mm.; female orifice about 38 mm. from head, and $1\frac{1}{2}$ mm. from sole. Sole rounded posteriorly, not projecting beyond body. Mantle finely fitted. Sides produced, so that a transverse section of the slug would be

[21] If Prof. Cockerell thinks the term *sloanii* preferable to *lævis* he might at least set the example by using it, or adhere to either the one or the other. Note 537 is very confusing.—W.E.C.

somewhat fusiform in outline. Colour, above dull rather dark olivaceous, below (including sole) dull reddish-brown. Habitat: Fond St. Jacques, St. Lucia. In British Museum.

This appears to be a very well-marked species, so I venture to describe it, the anatomy being unknown.

Simper has doubtfully referred to *occidentalis* a slug from St. Thomas, which presents some resemblance to *luciæ*. The position of the female orifice is almost precisely the same; and the whitish colour, without markings seems to ally it to *luciæ*. However, in Simper's slug the breadth, as compared with the length—the breadth of the sole, and the total length—all differ from *luciæ*. Thus:—*V. luciæ* has the breadth ·34 and the breadth of sole ·16 of total length. In Semper's slug the measurements are ·26 and ·08 of total length.

In the British Museum there is a small species from Dominica, black with the head and sole brown. It seems to be a new species allied to *langsdorfi*, but I hold back the description in the hope of further specimens being collected, so that dissections can be made.

550. *V. solea*. It is doubtful whether this is a widely distributed and variable species, or whether there is a group of distinct species closely allied to it. Some such species have been separated, and must for the present be held valid, namely, *V. tuberculosa*, *V. marianita*, and *V. multicolor*. For figures of these slugs see Mrs. Gray, *Fig. Moll. Anim.*, 1859, pl. 278, f. 2 (or D'Orb., *Voy. Amer. Mer.*, t. 21. f. 3-4), *Bul. Soc. Zool.*, France, 1889; *Jahrbuch d. D. Mal. Ges.*, 1885, Taf. 2, 4 ,and Semper's work.

576. *V. andensis*. Perhaps identical with *limayana*.

584. *V. nigra*. May be identical with *gayi*.

588-589. *V. kreidelii* and *telescopium*. These are supposed to be American.

In the list I have given the species of *Veronicella* in groups according to locality, but a better classification of them is to be desired. Dr. Simroth has proposed three groups, thus:—

(*a*) Acrocaulier. Penis perforate at the point; equatorial, *e.g.*, *V. sloanii*.

(*b*) Phyllocaulier. Group of *V. tuberculosa* and allies; neo-tropical.

(*c*) Pleurocaulier. Penis laterally perforated; Asiatic and African, *e.g.*, *V. maculata*.

Unfortunately, however, it is not yet possible to classify the whole series by the characters Simroth relies on, owing to our want of knowledge concerning the genital organs of many. If the groups are natural ones, very probably a sufficiently experienced person might be able to classify the species in them, even without reference to the anatomy; but I do not know of anyone, unless it is Dr. Simroth, who could at present attempt this with any chance of success.

V. taunaysi, as I pointed out in P. Z. S., 1891, p. 218, has characters which separate it somewhat widely from the type of *Veronicella*. We shall probably recognise it hereafter as the type of a distinct sub-genus, to which the name *Vaginula*, Fér., will apply. It does not fall properly under either of Dr. Simroth's divisions.

The group Acrocaulier is equivalent to typical *Veronicella*; Phyllocaulier and Pleurocaulier may hereafter have to be named as sub-genera.

Imerinia is a subgenus founded on a species from Madagascar, supposed to be *V. grandidieri*. The year before it was published, M. Ragonot applied the name *Imerina* to a genus of moths, and Mr. Gahan named a genus of beetles *Imerinus*. I mention this, as some may think this constitutes pre-occupation; but it seems to me that the difference of a letter sufficiently distinguishes the slug name.

The following description is taken from the specimens in the British Museum, on which the subgenus *Imerinia* is founded:—

Length 64 mm., breadth 16½ mm., breadth of sole 5½ mm. Female orifice 34 mm. from head, nearly 3 mm. from sole. Sole very narrow, narrowest posteriorly, rather rounded at end, not projecting. Mantle above and below thickly impressed-punctate; above with scattered raised warts, 1 or 2 mm. apart. Respiratory orifice practically median beneath end of sole. Some tufts of red-brown bristles about 1 mm. long, on anterior right-edge of mantle. A very slight impressed, hardly pale, middle-line of dorsum. Colour dark reddish-brown; no spots or bands. Two other specimens lack the bristles; one is darker, the other paler, brown.

Hab. Imerina, Madagascar (J. Wills).

Concerning *Leonardia*, I regret to say I possess no information beyond that published in *J. de Conch.*, 1890, p. 82. Might it possibly be the same as *Atopos*?

Vaginulinæ. So named because Binney used the name *Vaginulus* for the group, but perhaps *Rathouisiinæ* (*Rathouisiidæ*, Heude) would be a preferable subfamily name.

I should have been disposed to consider *Atopos* a synonym of *Rathouisia*, but Dr. Simroth, who is best qualified to judge, does not unite them.

601. *Atopos pulverulentus* apparently includes a specimen in the British Museum from Pinang (Theobald), marked "*V. sanguinea*, Stol." It has the body beautifully marbled with black and grey, the sole pale orange tinted. Length about 54 mm. Bluntly keeled.

604. *P. heynemanni*. Simroth founds this name on Heynemann's account of the Huon Gulf specimen in the British Museum. I made a description of this same specimen as follows:— Length, 36 mm.; breadth, 8 mm.; breadth of sole, $4\frac{1}{2}$ mm.; distance of margin to keel, 6 mm. Strongly keeled dorsally; a deep groove between sole and mantle, mantle thickly and finely papillate, occasional papillæ black, thus producing sparse black points. General colour ochreous, clouded with grey. A doubtful orifice on right side of sole about $4\frac{1}{3}$ mm. from head. No slit or orifice in mantle above; mantle projects over head anteriorly; body tapers posteriorly. Hab.—Huon Gulf (Dr. Comrie).

It is much to be regretted that Dr. Heynemann, in his paper on the slugs in the British Museum, did not think it necessary to cite the names of the collectors, or the persons from whom the slugs were obtained. Dr. Comrie's name is now first mentioned, I believe, in connection with the above slug; *Veronicella fusca* and *V. flava* (Borneo specimen), described without any mention of their collectors, were obtained by the Museum from Dr. Cunningham and E. Gerrard, jun., respectively. The *V. taunaysi* in the British Museum, it may be mentioned, is also from Dr. Cunningham.

605. *P. australe*. I believe this is a *Prisma*, not an *Atopos*, but have no exact information.

Janellidæ. Mr. Hedley has lately sent me a paper, "An Enumeration of the *Janellidæ*," which appeared in *Trans. N.Z. Inst.*, 1892. In this article he uses language "more

forcible than polite" regarding some of my published writings. I have privately communicated to Mr. Hedley my opinion concerning his controversial writings, and we are now on the best of terms, so there is no occasion for further personalities by way of public reply!

Yet I desire to assure Mr. Hedley and others, in all sincerity, that I greatly value criticism of my published statements, so far as it helps towards the elucidation of the truth. This must be the attitude of every reasonable naturalist, and if it is proved in any case that an error has been made, the author of the mistake ought to feel obliged to its detector.

"*Humanum est errare*," however, and if one attacks a paper with the deliberate intention of making the most of its faults, and it is astonishing how much criticism may be written. To illustrate this, I will take Mr. Hedley's "Enumeration of the *Janellidæ*," and point out the actual and probable mistakes and omissions it contains.

Page 156. Mr. Hedley refers to his paper in *An. Mag. N. Hist.*, p. 169-71, as exposing my errors, and uses other similar language, entirely ignoring my reply, in which I showed that his criticisms were without reasonable foundation. The "Enumeration" was read June 2nd, and as my reply appeared in May, it obviously was not available in Australia when the paper was written. However, on p. 160, Mr. Hedley quotes from my reply on one point, showing that he had it before the "Enumeration" was published. Why then did he not omit his previously written remarks on p. 156, or insert some justification of them?

Notwithstanding the language he uses in the "Enumeration," Mr. Hedley does not bring forward a single new fact to prove that I was wrong. Indeed, the whole paper contains no new fact, except the description of the interesting variety on p. 161.

Pages 157-8. My *Pseudaneitea* is sunk as a synonym (I called it a subgenus) of *Janella*, and its type species *(papillata)* is given as a variety of *J. bitentaculata*. One can only suppose from this that Mr. Hedley did not know *papillata*, the more so because the mistake of classing it as a variety is rectified in the recent list of N.Z. Mollusca, in which Mr. Hedley was assisted by Mr. Suter. With regard

to *Pseudaneitea*, it may be a section rather than a subgenus, and I have nothing to say against those who, with a full knowledge of the facts, prefer not to use the term.

Pages 158-159. *J. verrucosa* and *J. marmorata* are both credited simply to Von Martens, and stated to be from "New Zealand;" a glance at my "mischievous," P.Z.S. paper would have prevented these mistakes. They are from the Auckland Is., as Mr. Suter explains in a footnote, and they were described by Dr. Simroth, although Dr. V. Martens ticketed them with names. The authority, therefore, should be "V. Mts. in Simr.," or "V. Mts. MS., Simr." Another more doubtful point is the date of the publication of these two slugs. Mr. Hedley cites 1889, which is the date on Dr. Simroth's paper, but the *part* containing the paper is dated 1890. The paper was reviewed in the "*Nachrisblatt*," Jan.-Feb. 1890, and must have appeared, I suppose, in January of that year. There is still, however, the possibility that separates were issued late in 1889.

Pages 159. *Neojanella dubia*. I said the *head* of this was shrivelled. Mr. Hedley perverts it into a statement that the specimen was shrunken, leaving the reader to infer that the whole slug was meant. He also says it "probably belongs to the preceding species" (*marmorata*). Now this must be simply a bad guess, for there is apparently no foundation for such a statement. In Messrs. Hedley and Suter's recent New Zealand list, *Neojanella* is referred, without comment or query, to *J. bitentaculata* as a pure synonym! On what grounds I have no idea, and I have been waiting anxiously for particulars, supposing that such a reference must be supported by some very plain and unexpected evidence. But now I get a letter from Mr. Hedley, dated July 20th, 1893, in which he says "you will perhaps continue to support *Pseudaneitea* and *Neojanella*, of which I must require more evidence before admission. . . . If you return to London it would strengthen your position if you published a good figure of *Neojanella*." Now, what does this mean, unless that he is still undecided about *Neojanella*, and thinks it *possible* that further evidence might prove its validity? If so, how can the reference to *bitentaculata*, as mentioned above, be justified?

Page 161. The species of *Hyalimax* have some synonymy, which is omitted. Also *H. maillardi* is given as from Mauritius,—should it not be Bourbon? I have no access to the original description, but have always been under the impression that it came from the latter island. I note, also, that Dr. Heynemann cites it as from Bourbon only.

Page 157. "*Athoracophus*" and "*Konophera*" are doubtless only misprints.

Now I leave it to be imagined what sort of a criticism Mr. Hedley might have written of "An Enumeration of the *Janellidæ*," if it had not so happened that he, and not I, was its author.

Athoracophorus. For reasons stated under *Limacella*, I am not now disposed to reject *Janella* on account of preoccupation by a synonym. This was Mr. Hedley's view, but singularly enough, just as I decide in its favour I hear from him "I am now inclined to substitute *Athoracophorus* for *Janella*." [22]

608. *J. marmorata.* Messrs. Hedley and Suter place this as a synonym of Hutton's *marmorea.* To me, they seemed amply distinct, but there may be reasons unknown to any but these authors, which make it necessary to unite them. I have only seen one example of *marmorea* and none of *marmorata.*

610. *J. verrucosa.* For the present I give this the benefit of the doubt, but probably Messrs. Hedley and Suter correctly refer it to *papillata.* Hutton cites *papillata* from the Auckland Islands.

611. *N. dubia.* As above mentioned, Messrs. Hedley and Suter have referred this to *Janella bitentaculata.* The back of the *Janella* presents a groove which is lacking in *Neojanella*, and the specimens I have of *J. bitentaculata* are much smaller than *Neojanella.* Thus, *Neojanella dubia* (in alcohol) is 53 mm. long, *J. bitentaculata* from Wellington, N.Z., is 16 mm. long. (Spn. fr. Otago Univ. Mus.) *J. bitentaculata* = *antipodarum*, Gray, type specimen, is 19 mm. long. In Gray's type of *antipodarum* (in Brit. Mus.) the genital organ protrudes, leading one to suppose that the slug is mature. If so, it cannot possibly be the

[22] It is to be hoped that Mr. Hedley and other authors will retain the name *Janella*'—W.E.C.

same as *Neojanella*, but if Messrs. Hedley and Suter can affirm that individuals agreeing with *bitentaculata* (*antipodarum*) do grow to a length of 53 mm. (as measured in alcohol), and that when so grown they agree with my description of *Neojanella dubia*, of course I have nothing further to say. I very much hope that conclusive proof will soon be offered, one way or the other.

Hyalimacinæ. Mr. Hedley refers to the anatomy of "*Parmarion*" *kersteni*, V. Mts., which appears to make it a member of this group. Its proper generic position is still undecided, and my information about it does not enable me to offer any opinion.

Another "*Parmarion*" which I do not understand is *rangianus*, Fér., from Bourbon and (it is said) Madagascar. Tryon gives it as a *Parmarion*, and Gray (*B. M. Cat.*, 1855) cites it as a doubtful *Drusia*. It has also been called *Parmacella rangii*. I had an idea it was a *Hyalimax*, but Mr. Hedley makes no mention of it in his "Enumeration," and I have not now access to the literature that might enable me to decide about it.

CONCLUSION.

In concluding the list, I wish to point out that it is necessarily very far from perfect, and that the progress of knowledge concerning slugs must inevitably require great changes to be made, even in respect to matters which now seem beyond dispute. The compiler of such a list knows its weak points better than most of its critics can know them—knows how often it has been impossible to decide with any certainty about the validity of a species; and how often one opinion has seemed about as good as another, and has been followed because some choice had to be made, rather than because it was probably correct.

Probably there are few things so prejudicial to the progress of science as the spirit of confident assertion which will not readily admit the possibility of error, or consider the views of one who thinks differently. To illustrate the dangers of such an attitude, I may instance the radical changes which have taken place of late years in our views respecting the species of *Arion*. Kobelt's catalogue (1881) may undoubtedly be taken as compiled from the best sources, and to represent the opinion of the time, yet when we turn to *Arion* in the index, we find as follows :—

A. bourguignate=flavus var.
A. brunneus=empiricorum juv.
A. campestris=empiricorum var.
A. dupuyanus=fuscus var.
A. fasciatus=hortensis et *fuscus*.
A. intermedius=empiricorum juv.
A. nivalis=valid species.
A. olivaceus=valid species.
A. pascalianus=fuscus.

and so forth. It is easy now to see how little the conclusions of the authors of 1881 were to be trusted, but does this not suggest possibilities concerning the opinions of authors of 1893?

Finally, I will venture to make a suggestion regarding the list. Let it be the basis of our classification until it can be improved; and let every slug-student send notes to the "Journal of Malacology"; which may be published under the general heading of *Additions and Amendments to the Slug List.* Such notes, one might hope, would be fairly numerous, especially just at first, as every student on reading the list will be sure to think of several changes which seem to him necessary or desirable. The proposed changes might be discussed after publication by those who disagreed with them, and after a time, it might be announced that a second (revised) list was about to appear. Upon this announcement every student would write to the Editor of the Journal, giving his latest opinions, and in due time the list would appear, doubtless a vast improvement upon its predecessor. As in the present list, some notes would be appended, especially when it was necessary to explain the views of minorities who disagreed with the classification given. In cases of great difficulty, a post-card vote might be taken to decide a point. The revised list would not of course, be in any sense final, but would be followed by other editions as often as circumstances demanded or permitted.

If the funds could be obtained for printing, a new edition every year would be very useful, and would give a great impetus to the study.

APPENDIX.

By WALTER E. COLLINGE.

Professor Cockerell has placed all students of the slugs under a great obligation for so admirably and carefully compiled a check list. Only those who have worked at this group, and have extended their inquiries beyond the fauna of their own immediate country, are fully able to appreciate the value of such a list as the present, and whatever difference of opinion may prevail as to the validity of

this or that genus or the system of classification, all malacologists will, I think, appreciate the amount of patient labour involved in such an undertaking.

Professor Cockerell has invited me to append to his list some critical observations and notes of my own, but as the same has passed through my hands during the vacation, during which period I have had other work to complete, and often away from the sources of literature desired, I have only been able to express an opinion on a few general points.

I am not aware that the slugs have ever been so catalogued before, and therefore a very many points of difficulty must have arisen to the compiler as to classification, priority, generic and specific distinction, &c., in all of which cases a decision was a very perplexing matter. No one appreciates more than myself Professor Cockerell's work upon the slugs; in fact, for the last five years I have followed very closely his writings, and have been in constant correspondence with him, and which, I hope, may continue for very many years to come. We regard the slugs—in fact, the Mollusca altogether—from two entirely different standpoints: nevertheless, we are prepared to agree to differ, and not to permit objectional personalities to arise or stand in our way in elucidating the history of so interesting and important a group.

Hitherto the slugs have been studied purely from a systematical standpoint, but with the publication of the works of Simroth, Semper, Lessona, Pollonera, Godwin-Austen, Scharff, Hedley, and others, our views are rapidly changing, and a new and more rational system is supplanting the old. This new system—which I am pleased to observe is spreading in other departments of Zoology[1]—demands a knowledge of internal as well as external morphology, and as I have previously stated,[2] *rightly refuses to recognise inadequate descriptions or descriptions of shells apart from the animal, or to acknowledge genera or species founded upon purely external features;* in short, it demands that they shall be classified and created "upon the aggregate characters," and not upon single features.[3]

The slugs, as a group, are one which are subject to endless variation in colour, markings, form, size, &c., &c. Mr. Gain has shown that in a lifetime an individual species passes through a number of distinct variations in colour, markings, and form, very different, in some cases, from the adult animal.[4] The observations

[1] W. F. Kirby, "Nature," 1893 (10th Aug.), p. 339.
[2] Conchologist, 1892, vol. ii., p. 64 (footnote).
[3] Hedley, Trans. New Zeal. Inst., 1892, xxv., p. 158.
[4] Conchologist, 1892, vol. ii., p. 55.

of numerous malacologists on the changes effected by habitat, climate, food, &c., are known to all. Important as these various variations may be—I must confess I cannot attach the importance to them that some have done—they are, from the variability of their nature, unsuitable for generic or specific distinction, except as secondary characters. Recourse must, therefore, be made to the anatomy. In the form of the various organs we find a permanent and well-marked difference between one genera or species and another. It must be remembered that there are slight variations in the form, colour, &c., of the various organs according to age, season, &c., so that a reasonable limit must be allowed in which a species may vary. The anatomical differences which distinguish *Arion* from *Testacella*, or *Testacella* from *Veronicella*, are at once appreciable. Not only is this so, but, *generally speaking*, an acquaintance of any duration will enable the student in most cases to readily distinguish between one species and another from the morphology of the generative organs alone; where these are undeveloped or at all doubtful, the nervous and digestive systems are almost as serviceable. Seeing, then, that the external features are liable to such change, and that the internal are much more constant, I prefer to accept the latter, and upon these build up a rational basis for a system of classification. The old system of systematic zoology has had its day, and as a warning (and in evidence of its worthlessness) leaves us volumes of synonyms to almost every species, not to mention any of the graver errors it has been the source of. With the advance of morphological investigation, the student, instead of revelling in the multiplication of so-called species and varieties (to me Bourguignat and Westerlund are a terrible warning) endeavours to classify upon some scientific basis, and then to show the genetic or specific relationship between one genera or species and another. A study based on such lines rises to one of importance and value; on the old, resembles a schoolboy's attempt at a system of ethics—in short, becomes a farce.

Until Professor Cockerell describes and figures the anatomical differences in his species of slugs, I cannot accept them as valid. I do not say that they are not so, as many seem to be very distinct, judging from the external features, &c., but until I see structural differences—not mere variations in the breadth or colour of some single organ—differences which mark them off in the majority of individuals from their nearest known ally, I shall regard them as doubtful.

If we allow a species (or variety) to vary within a certain limit, there is no need for any such things as subspecies (or subvarieties)

which are so prominent in the present list. I will only mention a single example to show the utter absurdity of such a method of treatment. The genus *Amalia* has been thrown into the greatest confusion and chaos, so many are the species made out of the slight anatomical variations and the many colour variations of four or five species. Professor Cockerell warns malacologists *re* confident assertions, the admission of errors and the consideration of others' views, all of which are very apt and opportune, but when a case is brought to the test, and anatomical evidence of the most convincing and undeniable character from the ablest malacological anatomist living, is advanced to disprove the specific identity of such a variety as *cinereo-niger* of *L. maximus*, he writes:—"I have never been at a loss to identify *cinereo-niger* by external marks."

Coming to the *Arionidæ*, a family I am particularly interested in, there is much that I cannot agree with, re *A. ater*, *rufus*, and *empiricorum*. Professor Cockerell seems to have overlooked the fact that because Linné thought that Lister's species was identical with his, or vice versa, it does not at all prove that either were right. My view—possibly I am quite wrong—is that Linné described an *Arion* which he termed *ater*—I am omitting any question as to genera—a species which seems to be limited to the Scandinavian region; he also described an *A. rufus*, which is probably but a variety of *A. ater*? Various other European authors later described a large black *Arion* or varieties of it. The best description, however, about which there can be no doubt as to the species, is that of Férussac's. He gave the name *empiricorum* to this slug. Moquin-Tandon named the red variety *ruber*, which, however, must give way to Kaleniczenko's var. *lamarckii* (if the description is good), which is the same thing, and there the matter ends.

What Professor Cockerell is trying to prove respecting the varieties *bocagei*, *sulcatus*, and *mulleri* I really fail to see. First he endeavours to prove that *sulcatus* is something for which there is no evidence whatever, and classes *bocagei* as a variety of it, whereas Simroth, its author, classed it as a variety of *empiricorum*. He next suggests to class *bocagei* as a subvariety of *mulleri* and finally concludes "that *bocagei* is the *mulleri*-like form of *sulcatus*." Simroth states that *sulcatus* is identical with *empiricorum*, and even Pollonera advances little or nothing in support of its identity as a species. If there is any evidence—I have not the original description by me for supposing Müller's variety is identical with Simroth's, then the former must have priority, and *sulcatus* should remain as a distinct variety of *empiricorum*, unless we place the three unnamed minor forms I have described, all under one name. It seems to me that Moquin-

Tandon's var. *bicolor* is sufficiently well marked and described to include all those forms in which there is a dark dorsal surface and lighter sides; in such a case it would include, as well as the forms above mentioned, v. *albolateralis*, Roebuck, and v. *scharffi*, Ckll. (in 1891 Professor Cockerell classed this as v. *bicolor*, Moq. See *Conchologist*, 1891, i., p. 50).

Respecting the final suggestion, I will gladly do what I can, by placing the pages of the "Journal of Malacology" at the disposal of all malacologists for open and free discussion of the list.

I have a suggestion to make myself, which, if other malacologists will help, I will endeavour to carry out. It is very desirable, I think, that we should have a "Register of Original Descriptions," and, if possible, figures, where they exist, of all described slugs and their anatomy. I purpose to commence such a register, which will contain a copy of the original description of every known family, sub-family, section, genus, sub-genus, variety, &c., with reference to the original. These I will place at the disposal of any malacologist by sending copies of any description, on payment of some small fee to cover the cost of clerical expenses. The register, when complete, I may possibly print, and place in some public museum, with a collection of the slugs of the world, which I am bringing together. The descriptions desired at present are all in the foregoing list; after a time a notice will appear in the "Journal," stating by number and letter what are still wanted.

In conclusion, I feel sure the publication of this list well merits the grateful thanks of all malacologists, and that it will give a definite impetus to the study of the slugs in this and other countries. I trust the "spirit of confident assertion," &c., is not so rife as Prof. Cockerell thinks, but that we are all open to conviction, and pursuing our studies in a spirit of broad-mindedness, and with "that fanaticism of veracity which is a greater possession than much learning."

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